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ABSTRACT

This collection of papers, written by specialists in the field, presents information on significant topics in secondary reading. Each paper is followed by a discussion which raises questions and emphasizes points made in the paper. The topics covered include the establishment of an all-school reading program, instruction and class organization, special problems encountered, and developmental reading instruction in the secondary school. Also included are reading instruction in the content fields, clinical studies of high school students' reading, evaluation of secondary school reading programs, and significant reading research at the secondary school level. References are included at the end of each paper. (This document previously announced as ED 024 556.) (RT)

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READING INSTRUCTION in SECONDARY SCHOOLS

Prepared by a Committee
of the
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ROBERT KARLIN, Chairman, Publications Committee
MARGARET J. EARLY, Cochairman: Editor
GWEN HORSMAN, Cochairman: Conference Arrangements

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FOREWORD

Administrators and teachers are grappling with problems attendant upon the teaching of reading in the secondary schools. In view of this situation it seems timely that The International Reading Association should offer assistance through a publication that deals with several important aspects of reading instruction at this level.

In preparing this book first consideration was given to the selection of significant topics to be discussed in the different chapters. Next, outstanding specialists were asked to write papers on these topics, one topic to each specialist in terms of his or her special interests and qualifications. These papers were then presented at a small conference in Chicago. Highly qualified discussants were invited to supplement and enrich the presentation of each paper with their own viewpoints and ideas. This book brings to you the excellent papers of the specialists who were invited to prepare them, together with the important points made by the very competent discussants.

Getting an all school reading program established and under way is the first big step in teaching reading at the secondary level. The next step is to plan for instructional and class organization. Then after a program is started there are many special problems to be met. All three of these important topics are treated in Chapters 1-3.

Developmental reading in the secondary school is becoming increasingly recognized as a must. For a time remedial reading was the only type of instruction taught at the higher levels. At the present time, however, large numbers of secondary schools are teaching developmental reading or planning to do so. Hence, Chapter 4 is devoted wholly to this topic.

Teaching reading in the content subjects is a matter of major concern at this time. For this reason, Chapters 5-7 are devoted, respectively, to the teaching of reading in history, in science and mathematics, and in literature.

There are some students who are so severely handicapped that they

need specialized treatment. For this reason any book dealing broadly with reading in the secondary school must contain a discussion of this important topic. Such a discussion will be found in Chapter 8.

Evaluation of secondary reading programs is extremely important. We must know where students are at the beginning, what their needs are as the program progresses and how much they have accomplished at the end of the course. In order to provide assistance for this aspect of the program, Chapter 9 is provided.

Finally it is imperative that everyone who is concerned with the teaching of secondary school reading should be thoroughly familiar with important research findings in this area. In order to meet this need a summary of significant reading research at this level appears in Chapter 10.

Deep appreciation is extended to Dr. Robert Karlin for implementing this project, to Dr. Ralph Staiger for countless acts of assistance, to Miss Gwen Horsman for her very competent execution of arrangements for the conference, and to Dr. Margaret Early for her expert work in editing the manuscript for publication. Profound gratitude is extended to those who prepared the excellent material for the chapters in this book, and to the discussants for their stimulating and enriching discussions.

Nila Banton Smith
President, International
Reading Association
1963-64

The International Reading Association attempts, through its publications, to provide a forum for a wide spectrum of opinion on reading. This policy permits divergent viewpoints without assuming the endorsement of the Association.

A. Sterl Artley

University of Missouri

1. Implementing a Developmental Reading Program on the Secondary Level

TWENTY-FIVE years ago various aspects of reading on the secondary level were being discussed in journal articles, and in a few junior and senior high schools reading programs were actually in operation. In spite of this, it has been only within the last decade, in fact within the last five years, that the importance and need for a developmental reading program in grades 7 through 12 have been fully recognized. In fact, I shall predict that when the history of reading instruction is written it will show that one of the major points of emphasis of the 1960's will be the organized extension of the developmental reading program into the secondary grades.

Surveys of Secondary Programs

In a recent article Strang (26) reports several statewide surveys indicating the extent to which reading was being taught in junior high schools. For example, in 1958, 54 per cent of the junior high schools of Illinois were providing reading instruction, while in 1959, 65 per cent of the junior high schools of Florida were doing the same. The surveys showed, furthermore, that the majority of those programs were established within the last four or five years.

In a more recent study involving reading in the seventh and eighth grades of selected AAA Missouri schools, Smith (24) found some type of reading program in operation in 81 per cent of the schools. When certain evaluative criteria were applied to these programs, one of which was that the program had to have been in effect prior to September 1960, only thirty-two schools remained for further study.

It is a striking fact also that the philosophy underlying the programs being developed is undergoing a change from that of the past. Whereas at one time the reading program was thought of as being remedial in

nature involving a few students, now it is predicated on the belief that the program should include *all* youth rather than the few who, for one reason or another, are not reading up to expectancy. Smith found that out of 113 programs studied, 68 included all the seventh and eighth graders. Furthermore, out of 102 respondents reporting the types of program in operation, 72 stated that it was developmental in nature. Hence, insofar as this study is concerned, we are seeing an acceptance of the belief that all students can perform on increasingly higher levels in all aspects of reading as a result of a program that makes provisions for systematic and sequential growth beyond grade 6.

Establishing a Reading Program

A number of issues and questions have to be faced as the need for a developmental reading program is recognized. Unlike a science program that is universally accepted as part of the curriculum and is structured and organized, a secondary school reading program is new. Administrators have no pattern to follow in organizing such a program, nor are the teachers trained to teach the courses. Anyone who works in this area is a pioneer.

Our particular concern in this paper will be a consideration of the questions and problems involved in getting a reading program established and under way—of implementing a developmental program on the secondary level. We begin by examining reports of some twenty-five reading programs that were in operation in various parts of the country. Though a program in Little Rock or St. Paul might be different from that in Norfolk or Houston, it is possible to identify a rather consistent pattern of steps leading to its implementation. Here we shall attempt to indicate these steps and show what each entails.

Assumption of leadership. The idea for a developmental reading program may have its origin in a professional course, a professional article, an educational conference, a curriculum study, an examination of the school-wide test results, or a dissatisfaction with the existing conditions. [Campbell (3); Fields (9); Ellis (8); Christophe (4)] The idea may germinate and take form in the mind of the superintendent, the building principal, the curriculum director or coordinator, or a classroom teacher. It may represent the combined thinking of a departmental staff.

In many cases the person or group responsible for the idea has neither the time nor the training to guide it to fruition. Here the responsibility must be delegated to someone who is trained, experienced, interested, and

has the time to devote to the project. Depending on the size of the school and its organizational structure this person may be someone who is already affiliated with the school system, perhaps a classroom teacher who is trained and who shows qualities of leadership. It could be the language arts supervisor or a special reading teacher. In other cases it may be necessary to employ a person with special training and experience to take over the assigned duties.

It is at this step of providing leadership that a secondary reading program frequently fails to materialize—there is no one with sufficient training and experience to take over the duties. Smith (24) in his study of junior high school reading programs in Missouri asked the principals of schools having no program to state their reason. The first given (67 per cent) was "lack of specialized leadership," and the second (50 per cent) was "lack of time available." The second reason is indefensible and the first indicates the absence of personnel trained for this type of activity. (Incidentally, Smith found that 21 per cent of his respondents indicated that reading instruction should have been completed by the end of grade 6!)

Further evidence of this situation may be found in the Smith study to which reference has been made. In the 32 junior high schools having reading programs meeting the criteria of "comprehensiveness," 50 per cent were under the direction of a person who had no training for the responsibility. Likewise, Simmons (22) in a five-state survey of certain aspects of secondary school reading programs found that the program supervisor had no formal training for the work involved in 74 per cent of the small schools, 49 per cent of the medium-sized schools, and 44 per cent of the large schools. This condition is nearly synonymous to that of establishing a mathematics department and placing a person in charge with no training in math. In fairness to all concerned, however, the existence of many fine programs under the direction of individuals without special training attests to their willingness to take over an essential task and to learn on the job through professional reading and study.

Creating staff interest. After some person has assumed responsibility for implementing the idea of a secondary level developmental reading program, the next major task is that of arousing active staff interest, support, and participation. This step should not be considered a "selling job," but rather a process of implanting an idea and stimulating and guiding its development from within. Though the director of the program-to-be may light the fuse to an idea, it is the school staff that must develop

it and furnish the driving power behind it. Each member regardless of instructional area needs to become involved in the program and come to see that he has a responsibility for its success. The program must become school-wide rather than one that belongs to a person or a single department. Granted, it might be more expeditious for the principal to mandate a program with a "let-there-be-light" edict. And quite likely, a loyal and cooperative staff would follow orders and carry on in the best way possible, but it will be the principal's or the director's program rather than one that rests on a firm foundation of staff interest and support. This is the second spot at which a good idea may have its demise.

Reports of programs in operation indicated a number of ways that the interest and support of a staff could be aroused. Christophe (4) and Miniclier (18) suggested that the staff take a critical look at the existing conditions within a school by considering the results of a school-wide testing program. Almost invariably questions will be raised, the answers to which in some way will point to a consideration of a reading program. For example, what factors lie behind failure to achieve up to grade norms? How can students be expected to achieve when they can't read the materials assigned to a given grade?

A critical examination of the results of an existing program of limited scope might point up the need for one with a broader base. For example, Johnson (14) indicated that past efforts to improve the reading situation in his school had failed because the responsibility had been vested in the English department where many of the teachers were unwilling to give sufficient time to reading. As a result of a reappraisal of the situation the need for a broader based program became obvious.

Cooper (6), in order to bring the importance of reading to the attention of his faculty, devoted several staff meetings to a discussion of recent trends affecting secondary education. These trends had to do with the increased number of students continuing into the secondary sequence with its concomitant effect on aptitude for reading, retention of youth in school, and the effect of social promotion on the junior high program. It became obvious to the faculty after discussing such questions as these that a developmental reading program should be a part of the secondary curriculum.

Several of the reports indicated that during this stage a reading specialist or authority was brought in to address the staff. This is a good suggestion provided that the speaker at this point attempts to help the faculty develop a concept of and a need for a developmental program and to help them

understand that this must be a cooperative effort in which each has an opportunity and a responsibility. He should resist the temptation of telling the staff *how* to organize a program.

It would seem as though there should be at least two important results of this period of staff action that Early (7) calls "teacher readiness." The first is a series of understandings about reading itself. These would involve the concepts that reading is a process rather than a subject to be taught, and because of this, wherever reading is done an effort should be made to develop it to the highest levels of competence possible; that reading is more than pronouncing words; that regardless of the effectiveness of the elementary reading program, there is need for an extended program to promote growth for all students on the secondary level; that growth *in* reading is only a means to the end of growth *through* reading; and that individual differences among students necessitate an educational program differentiated in terms of instructional materials so that all students may successfully and honestly learn.

The second result of this step is the firm conviction that the development of a reading program is worth staff effort. Freudenreich (10) emphasizes the importance of this outcome in these words: "Unless there is a genuine interest on the part of the school staff, unless there is the realization that no other single program which the staff might plan would have as far reaching an effect on improvement of the total teaching-learning situation in the school, then any developmental reading program, regardless of source of impetus, may not be fully effective." Interested persons, he adds, can always come up with solutions to their problems.

It should be apparent that if this second step is taken carefully, a considerable amount of time will be involved. Christophe (4) indicated that he and his staff took one semester to think through the basic issues and lay the groundwork for a program. Severson (20), Reading Consultant-Coordinator for the Nicolet High School in Milwaukee, recounts that she took one year for the initial planning stage. Better it is to move slowly and develop strong internal motivation for a new program than to move into one before the staff has accepted it and is familiar with what will be involved if one were to be undertaken.

Organizing the staff for action. Up to this point the faculty has been working as a group under the guidance of the program chairman. It is obviously difficult for a large and diversified group of staff members to make decisions and establish policies. Consequently, whenever it is felt that the staff is sufficiently committed to the development of a school-

wide reading program, it is ready for step three—organizing for action.

Reports of reading programs in progress indicated that one of the first things to be done in organizing the staff for action was to elect or appoint a representative all-school faculty committee to design a master plan for a developmental reading program and ultimately to assume responsibility for putting it into effect. This committee should be made up of representatives of the several instructional areas who will likely be key teachers or individuals who have had courses in reading or who have a special interest in designing a program. It would be advisable to add to this committee the school counselor and the librarian since these people will have important roles to play.

One of the major activities of the reading committee is that of considering such issues as the following and formulating policies regarding them:

1. Responsibility of the content area teachers
2. Special function of the English teachers
3. Special function of the school services—librarian, counselor, nurse, etc.
4. Skills and competencies to be developed in each instructional area
5. The instructional program for various groups of students—mentally accelerated, retarded, etc.
6. Grouping students for instruction
7. Differentiating instructional materials and procedures for the range of ability within the classrooms
8. Selection of appropriate instructional materials
9. Professional reading and discussion
10. Development of reading interests and tastes in all instructional areas
11. Parent instruction
12. Evaluation of the program

The reports showed that in some cases sub-committees were established to study and make recommendations to the reading committee with respect to such issues as those involving materials and equipment, skills and competencies to be developed in each area, or grouping for instruction. In considering these issues it is advisable to see that the lines of communication are kept open between the reading committee and the faculty. In the Nicolet High School in Milwaukee, for example, the members of the all-school committee relayed all information to the departments represented, and, in turn, received suggestions from them for consideration. In this manner, all staff members became acquainted with the theory, significance, and practical aspects of the reading program.

Bamman, Hogan, and Greene (1) give a check list of practices that would serve as an excellent guide to points to be considered by the planning committee. This is the time also at which an outside reading authority might make his best contribution to the work of the committee by acting in the capacity of a resource person or consultant. Out of his experience he can react to the thinking of the committee, help clarify issues, suggest sources of information, and give general guidance and encouragement. The committee should not expect to be told *how* to organize a reading program, for in a sense each staff must tailor-make its own program in terms of its organization, type of student population, level of teacher competence, and quality of leadership, as well as other factors.

A special caution is offered the reading committee while it is in the midst of its planning operation. That is to avoid being lured into an easy or a seemingly painless solution to its problems. It would be so easy to conclude that self-help kits of materials in the hands of homeroom teachers would be sufficient, or that a corrective program for those reading below par would suffice, or that a reading laboratory equipped with teaching machines would be adequate.

Of all the deceptively easy solutions the one to guard against is that of turning the responsibility over to the English teachers under the assumption that since reading is one of the communications areas, "George English can do it and the rest of us won't need to get involved." This approach should be avoided for several reasons. In the first place, it negates the basic concept of developmental reading. Since reading is a process and not a subject, it is a fallacy to assume that responsibility for promoting its continued growth can be turned over to a single division, class, or teacher. All teachers, within the context of their teaching area, must develop the competencies that contribute to effective reading. In the second place, the English teachers as a group have no greater competence for teaching reading than any other group of teachers. It would be relatively difficult to find a teacher-training institution including in its curriculum a course in secondary reading procedures as part of the program for English majors. Where it is offered it is quite likely to be an elective, and academically oriented advisers are more inclined to place the student in courses in the modern novel, eighteenth century literature, or specialized courses in Byron, Shelley, and Keats than in one that deals with such mundane topics as word perception, critical reaction, or reading to ascertain idea relationships.

The above is not meant to be critical of English teachers. Traditionally,

the English program on the secondary level has been concerned with grammar, literature, and composition. Reading has not been considered a part of the English curriculum, under the assumption that this area had been thoroughly covered on the elementary level. Hence, the addition of reading to the English curriculum tends to make it an extra, an adjunct, rather than an inherent part of the language arts program. There is the tendency to deal with it, as Early (7) points out, by setting up special reading classes, clinics, and workshops that continue to be appendages to the curriculum. And what started out to be an all-school program ends being little more than a program in name only, "ignored by everyone but the struggling teacher."

Eventually, the all-school committee must summarize its thinking on the issues and problems with which it has been dealing and formulate its plans and policies and submit them to the administration and faculty for approval. Severson reported that in their case after a year of planning, a report was prepared by a summer workshop in which all members of the all-school reading committee participated. It developed lesson plans, ideas, and specific suggestions for use the following fall. These ideas were put together in a *"Blue Book"* which explained the philosophy under which the program was to operate, the characteristics of good readers and symptoms of reading problems. It also included an outline of teaching plans. Regardless of the form in which it is presented, a curriculum or instructional guide very likely will be the end product of the all-school committee's work.

Putting the Program into Operation

Eventually the talking and initial planning must terminate and the gears be set in motion. Time should be included in the school schedule for the purpose of introducing the program. Severson indicated that a part of the pre-school workshop was devoted to its launching. The *"Blue Book"* was discussed and a reading specialist from a nearby university was brought in to consider problems of concern to the staff.

But setting the gears in motion is only part of the task, for in spite of the planning that has gone into the program, few, if any, of the teachers are actually prepared to teach reading. This being true, an in-service training program appears to be an essential part of those programs reported in the literature. The aim here, of course, is to help all teachers perfect their ability to promote continued growth in and through reading. A number of ways were indicated by which in-service instruction was pro-

vided. Among those mentioned were the following:

1. Demonstration lessons
2. College extension courses
3. After school, evening, or Saturday morning workshops
4. Departmental study groups
5. Reading conferences
6. Classroom visitations

Through such activities as those mentioned, understandings were developed around such topics and problems as:

1. Proper use of instructional materials
2. Methods of developing certain skills and abilities in the areas of word perception, critical reading, propaganda analysis, etc.
3. Teaching a directed reading lesson
4. Developing a readiness for an assignment
5. Enriching the reading program for the competent reader
6. Adapting instruction to the range of reading ability in the group
7. Identifying the reading competencies to be developed in a given content area
8. Identifying particular reading needs of students and ways of meeting them
9. Making maximum use of test data
10. Grouping pupils for effective teaching
11. Classifying and grading supplementary materials
12. Developing multi-level reading lists for social studies units
13. Dividing responsibility for skill development
14. Extending the use of the school library

Loretan (16) gives a detailed explanation of the kind of in-service training program being used in certain high schools in New York City. Though this program has been developed for use in a large city, many of its features could be adapted to a smaller system. One of its interesting features is the use of reading methods demonstration teams made up of trained specialists who work primarily with beginning content area teachers. Each consultant works with a group of teachers in various subject areas, teaching demonstration lessons and conducting individual and group conferences. The value of this particular program, Loretan states, is "the psychological impact that it has in the schools in question. The whole school becomes motivated."

The question might be raised as to why such instructional helps were not given during the planning stage. The reports show that in some cases they were; yet experience seemed to indicate that in-service help

was of maximum value when given at the time it was needed, when suggestions could be used immediately with a group of students. Then, too, it is difficult to pre-plan for some aspects of the program. One simply has to learn on the job. Clark (5) in discussing this point writes, "Our reading specialist planned as the project unfolded; and thus produced for us an in-service experience much nearer to our actual needs than conscious pre-planning could have produced."

Evaluation and Modification

After the program is well under way a period of evaluation is needed to determine its over-all effectiveness. In the journal reports where evaluation was discussed the procedures took several different forms. In some cases a reading test was given at the beginning of the year and again at the end, and the gains were measured against those of the standardization group. Unfortunately, little was done to assess reading growth in the content areas, the reason being likely that it is more difficult to find valid tests of reading performance in science, history, or mathematics. Furthermore, there was a noticeable absence of evaluative programs that measured reading in its broadest sense as construed by Gray and Rogers (11) in their *Maturity in Reading*, for example. Reading growth was strictly in terms of the areas assessed by a typical standardized test, limited usually to vocabulary and comprehension of stated meanings.

The most practical and useful evaluation comes through the day-by-day observations of those participating in the various aspects of the program—both teachers and supervisors. "How does the method, the procedure, or the technique work? How may we improve upon it?" Should be the kinds of self-evaluation questions asked. The check list of reading practices by Bamman, Hogan and Greene referred to earlier would also be useful in evaluating the program.

A more sophisticated approach to evaluation would involve the use of experimental groups, each group employing a particular kind of approach, technique, or practice. Thornton (27), for example, described the use of this approach in the Atlanta school system. A program of reading improvement, stressing chiefly the development of rate was compared with one that emphasized vocabulary and comprehension. When it was found that the group employing the latter approach made gains greater than the one stressing rate, the program was modified accordingly.

As was just implied, the purpose of evaluation is not only to determine the growth made by the group or by individuals, but to guide subsequent development of the program. Figuratively speaking, the members of the staff are carving out the plow handles to fit their own hands. They are not superimposing upon themselves a program built by someone else but are constructing and re-constructing one that fits their own situation. Each year sees the teachers trying out new ideas as a result of the collective past experience of the entire staff.

Hill (12), after discussing the program of evaluation used in the Dubuque secondary school reading program, writes, "As the program has progressed it has been necessary to adjust the organizational plan and the instructional procedures. These changes have been the result of professional growth by the faculty and better identification of the needs of the pupils. A better understanding of the teaching problems of teachers has been gained by the administrative staff. A better understanding of the administration and its problems is being gained by the faculty." This statement of Hill's summarizes very well the idea that a dynamic program results in more effective teaching procedures as well as in professional growth and understanding of all staff members as they become involved in a cooperative enterprise.

Possibly one of the questions that might be raised with respect to the implementation of a secondary school reading program such as that described would have to do with the amount of time required to get the program under way. True, no indication is given that this can all be done in a few weeks or even months. Severson, quoted frequently in this report, described their program as one requiring three years to get under way. Likewise, Freudenreich in his discussion of the organization of a junior high school program assumes that one year will be used for learning, one for orientation, and one for putting the program in action. Early, in her discussion of the problems to be considered by the faculty in setting up a reading program, cautions against moving before the faculty has given careful consideration to questions that "penetrate the philosophic structure on which a sound program can be erected." True, nothing should stand in the way of the teacher who wants to try out a new idea in her class before the organized program gets under way. However, if we are considering introducing an all-school program it would certainly be advisable to build it on a firm base of faculty interest, support, and competency. To do otherwise militates against the possibility of its success.

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DISCUSSION

DR. ROBINSON: I'd like to underline the fine points that were made by Dr. Artley. First, I too hope that the '60's will bring a really good developmental program to every high school. One reading methods course, at least, is required of all high school teachers who are to be licensed to teach in Illinois. Even though we recognize the limitations of courses *per se,* we think this is going to be a start; and it is not just for English teachers, but for other teachers too.

When a secondary reading program gets underway, all teachers benefit and their pupils benefit, too. There are different degrees of teacher participation

which will undoubtedly be discussed here as the conference goes forward. I worry a little bit about the practicality of waiting until all school personnel are ready to support the program. I've seen schools where I doubt if we'd ever be ready. In theory, it's absolutely right, but I think that we might face facts and say that we could get under way with the co-operation of most of the teachers. Sometimes we can introduce a partial program if we recognize it as that, as a means of selling a total program.

SR. JULITTA: I would like to consider the role of the English teachers, who as Dr. Artley said, are most often called upon to implement a program in reading. I, too, find them no better prepared than any other content area teacher. Indeed, there are English teachers who consider reading literature as the reading program. To be sure, reading includes techniques that are also used in reading literature; but this is just one part of the program, not the total reading program.

I've noticed that some reading programs have started with interest and enthusiasm; but after three to five years, the program becomes almost obsolete because of turnover in staff. The new members are not oriented to the thinking of a reading program which was originally planned by the staff of previous years.

Unless we can get across to all secondary teachers the idea of teaching reading, I don't think that we are going to be able to implement programs designed for the participation of all teachers. In-service courses alone will not do the job.

DR. SHAFER: I think that Dr. Artley has set the scene for us in this conference in a unique way, because his paper deals with all of the problems faced by any school attempting to design a secondary reading program. . . .

I believe that you can organize a reading program in just the way Dr. Artley has suggested, and you will do a great deal in influencing attitudes about reading. But I'm concerned that you might go through all the steps recommended and still not solve the problem of helping young people to read efficiently in the content fields; because we don't really know enough, I feel, about reading priorities and skills at the higher levels of comprehension in these disciplines. We simply have not done the basic research necessary, those of us in universities, in order to solve this problem.

The English teacher, it is true, does not have the whole picture of the teaching of reading; but the English teacher is in a unique position, I feel, to do something about it, because the English teacher's colleagues think that he knows the answers about reading; the principal thinks so, the superintendent thinks so. It's a matter of drawing the English teacher into our common school concern in reading, as has been pointed out here.

QUESTION: How do we get the content teachers to take over their responsibilities in the teaching of reading?

DR. SHAFER: We need to become intimately involved with the various mathematics experiments, the work going on in the sciences, and in the social sciences, to the extent that we can isolate the reading demands in these areas. We must show our colleagues in these areas that we are not simply interested in something external to their interests, called reading, but that we see reading at the center of their interest.

DR. ARTLEY: I think there's an added point here. When we begin to work with many of the content teachers, they will discover that they are already teaching reading but not calling it that. Some very fine things are being done in the content areas, as, for example, vocabulary development, which is a very important part of a developmental reading program in mathematics or science. So one can begin at this point.

Now, what else can I do (as a content teacher) to add to what I am now doing? One can hardly meet with a group of teachers and hear them discuss their problems without coming to the question: what am I going to do with students who can't read the text? All right. Here is a good place to begin. I believe that we can begin on the level where we find these content teachers, showing them that they are already teaching reading, but adding other things that might be done.

QUESTION: What is the place of the special course in developmental reading taught by a reading teacher?

DR. ARTLEY: This is not a program that we can turn over to one person and assume that, once this has been done, our problems are all taken care of. I would think that the social studies, math science and home economics teachers would be equally concerned with a developmental program in reading; only now, it's a developmental reading program in so far as it relates to social studies; to mathematics; and to English; not one, but all of the teachers being involved in it. Now, which one of these you call the main developmental reading program, I would have some hesitation in deciding.

DR. ROBINSON: I think we're seeing here a confusion in terms. I think we have tended in high school to label as developmental reading anything that is not remedial reading. Therefore, a class is "developmental reading" if it does not take retarded readers. Therefore, a combination program of any sort is developmental reading if it does not work primarily with retarded readers.

The point that Dr. Artley made was that a developmental reading program permeates the whole school. It does not necessarily begin and end with *a* class. It may begin with it, but it certainly doesn't end with a class labeled developmental reading.

The question that was raised earlier, as to how to involve the other teachers, may be closely related to what some people call a developmental program by one teacher. When that program is primarily in-service training, it may make a great contribution to the total all-school program. When it is pri-

marily to do the whole job of teaching reading, then I think it misses its mark.

DR. SHAFER: This gets at a very critical question which came up in Dr. Artley's paper; that is, how do you select the person who can work as a reading consultant in a secondary school? What are the qualifications that this person should have?

It seems to me that the consultant not only needs to know the field of reading very well, including beginning reading, but he also needs to be able to talk the language of the subject-matter teachers.

SR. JULITTA: I would like to see a reading program carried on by all teachers. . . . Did you imply that there would not be a developmental reading class?

DR. ROBINSON: I certainly didn't. What I meant to imply was that we would not be satisfied with a developmental reading class *per se*.

Elizabeth A. Simpson

Illinois Institute of Technology

2. Organizing for Reading Instruction in the Secondary School

THE role of reading in the secondary school curriculum needs re-emphasis. A high-school principal expressed this by saying, "In our school we have a reading team as well as a football team." Most of a person's knowledge is gained through reading—in school and throughout one's lifetime. Therefore, for continuous increase in a person's knowledge, the steady development of an individual's reading ability is essential. It should be a major objective of secondary schools to develop these abilities and interests so that all students may attain independence and enjoyment in reading. This requires not only leadership but organization, which is the subject of this paper. Yet a recent survey of reading practices in one area of the country revealed some sharp discrepancies between what actually is being done and what could be done. In this survey more than a third of the schools responding stated that they had no reading program of any kind. When reading programs were reported, the majority were narrow in scope, rigidly administered, and quite limited in the number of students served. (2) This problem exists nationwide.

We have heard recently a great deal about the population burst, but far less significance has been placed upon the burst in knowledge. To keep abreast of this burst in knowledge requires proficient, successful reading habits. Teachers must become more vigorous proponents of the tremendous role that reading competency and interest in reading play in promoting individual welfare and social progress.

For the purposes of discussion in this paper, the writer proposes the following criteria for judging a successful level of performance resulting from a reading program in secondary schools:

1. Approximately 100 per cent increase in reading speed;

2. A substantial increase in level of comprehension;
3. An extended general reading vocabulary;
4. Increased ability for critical reading;
5. An awakened recognition of the role of reading in an individual's career.

These are all criteria which can be quantitatively evaluated at the secondary school level. Any program which falls substantially short of these objectives is inadequate.

Four-fold Approach

A well-conceived secondary school reading program provides four approaches to help students learn to read better. These four approaches constitute a balanced, developmental, all-school reading program. Likewise, they are a yardstick for evaluating whether or not the reading program is a balanced one. These four approaches are:

First, the basic reading program to teach students how to develop general reading abilities—word recognition, vocabulary meanings, comprehension, rate and study and work habits.

Second, the specific reading and study skills that may best be taught in the various content subjects by the content teachers themselves.

Third, guided reading to provide experience for purposeful growth, such as reading to develop a hobby or to pursue a vocational interest.

Fourth, free reading for enjoyment.

All four approaches need to be emphasized concurrently by the appropriate staff members for an effective, well-organized developmental reading program.

There is no one best way to organize reading programs. The best reading programs are the ones that are "tailor-made" to meet the diverse needs of each school. However, there are five requirements that are fundamental to the success of all reading programs:

1. "Readiness" on the part of the staff to develop the best possible reading programs in a school. It is highly unlikely that one hundred per cent staff readiness will exist in all schools, but the success of the program is highly correlated with how eager the teachers are for all students to read better.

2. Administrative enthusiasm and support. Administrators are the key catalytic agents between the teaching staff and the community. Administrative leadership is essential to organize and extend the reading program.

3. Active interest on the part of parents who have an important role in the reading success of youngsters. Parents profit from guidance from

the school. Some schools have organized parent study groups on reading. These parent study groups are conducted by the reading teachers who meet regularly with parent groups to discuss issues related to reading. Parents can set an example for youngsters with their own reading habits.

4. Adequate budget. This requirement is self explanatory.

5. Emphasis throughout the school and in the community upon the values of reading. Increased concern for reading as an esteemed activity is certainly needed in our country now more than ever before.

The most successful reading programs have a reading committee which in one school is called, "The Reading Strategy Committee." The most effective reading committees are composed of representatives from all areas of the curriculum, the administration, library and guidance department, rather than solely from the English department. This makes reading a part of the total curriculum and the responsibility of all. An effective way to develop increased leadership is rotating membership on the reading committee. Membership on this committee is an excellent way to win converts.

Specifically, the reading committee 1) helps the teachers to extend the reading program throughout the school, 2) aids in public relations for the program, 3) serves in the capacity of a review board to continuously evaluate the program and to make improvements beyond what the teachers alone can do, and 4) facilitates communications about the program.

Reading Programs in Action

As has been stated earlier, there is no one plan for organizing a reading program that will meet the needs of all secondary schools. Throughout this country there are a variety of secondary school reading programs in action which are working effectively. The writer has worked with or actually observed the reading programs described in this paper.

For schools beginning a developmental reading program, the voluntary approach is most effective. In starting such a program it is wise to work with classes composed of students with above-average to superior ability, who are not reading up to their potential. The reasons for beginning with the more able students are that more rapid progress can be made and such results will help to set standards for the reading program, not only to other students but also to staff members and to the community. Often the brighter students are being held back by some inefficiency in their habits of reading. These students are highly motivated, and excellent results

may be obtained in a relatively short period of time. Such voluntary programs range in length from six- to nine-week units and sometimes a semester. They are usually so organized that students give up study hall time to enroll in the reading program, although in some schools the instruction occurs outside of school hours. Schools establish a reading center, which is well equipped with a wide variety of materials, and directed by a reading teacher who teaches the volunteer groups. Some schools have programs which take students voluntarily, regardless of their reading ability (1). This plan of grouping usually results in a wide range of reading abilities necessitating the need for a wide variety of materials.

Another plan is a unit devoted to the basic reading skills as an integral part of the English curriculum. This unit occurs usually as a part of the ninth or tenth grade English program. A few schools have developed a unit of reading in each of the four years of the English curriculum. Frequently it is the reading teacher who teaches the reading unit, with the assistance of the English instructor. If the English classes are homogeneously grouped for ability and reading, the nature of the reading unit varies from one class to another. The length of the unit varies from school to school. One of the criticisms of this plan of organization is that the unit is not long enough to provide adequate instruction in reading for the less able readers. In some high schools the less able readers—not the poor learners—are placed in special Freshmen English sections in which considerable emphasis is placed upon reading skills and related language arts abilities throughout the entire year. In one such situation there are four such sections with twenty students in each class, or a total of eighty students. The weakest readers among the eighty are given two extra periods of reading instruction per week by a special reading teacher. The students selected for these four classes are identified from the end of eighth grade testing information. Such intensive assistance in the ninth grade has meant the difference between going to college and not going to college for some students. Parents of these students should be made fully aware of their reading habits and guided to encourage them in every way possible. This parental awareness will help likewise to strengthen the reading program. However, reading training should not be the sole responsibility of the English department.

A third plan is a program that provides for both voluntary training and a required unit of reading as a part of English. The reason for referring to this plan separately is that when both approaches are provided

within a school, additional staff, time, space, materials, and budget are required. Actually, this plan is a combination of the first and second patterns of organization mentioned above.

A plan that provides more extensive training than the ones mentioned above is frequently referred to as an all-school reading program. This is a reading improvement program designed to increase the reading efficiency of all students in a school.

One such program is now in its fourth year and rapidly expanding. It was proposed to the teaching staff by the superintendent and approved whole-heartedly by the faculty. In order to give direction to the program, a reading strategy committee was organized. The program is school-wide, not isolated and remedial only. It concerns reading in all departments of the high school and at all levels of learning. Through in-service training, content area teachers were shown how to contribute to reading and study improvement. During the first year, major emphasis was placed upon speed and comprehension. Authorities on reading were brought to the school to meet with the staff. Professional materials were purchased for the faculty for further in-service training. Each department could also add to its professional library. Bulletins were issued to keep the faculty aware of the program's progress and new developments in reading. A reading club was formed under the direction of the teachers. The purpose of this club—called Sigma Chi Sigma—is to stimulate interest in efficient reading skills. This club is now becoming national in scope with membership from other schools throughout the United States.* While speed and comprehension are stressed by all teachers, there are other important elements in the program. Teachers in the content fields analyzed and developed the reading abilities that are essential for successful study of their own subject-matter areas. This was done by departments.

Another phase of the program concerns vocabulary development. All teachers in all departments worked under the direction of their department chairmen and have developed vocabulary lists in each subject.

One of the first projects undertaken by the reading strategy committee was the preparation of a pamphlet called *Growth Through Reading*. This pamphlet contains a recommended reference list prepared by the teachers in each department. The pamphlet was distributed to the home

*For further information concerning membership in Sigma Chi Sigma, write to Mr. George W. Walker, Coordinator, Reading Improvement Program, Maine Township High School West, Des Plaines, Illinois.

of every student in the high school. Other schools are also developing the same kind of pamphlet with some variations.

As the program developed, major emphasis has been placed upon the development of good study habits as they relate to good reading habits. To implement this objective, a group of staff members developed a *Study Habits Manual.* All students receive this manual in their homerooms and, in addition, are provided with a supplemental insert to the booklet for each of their classes. These supplements were written by the teachers in each department and contain specific study aids for each subject. Slides have been developed to complement the *Study Habits Manual.** A group of teachers and students planned and drew a series of thirty-six slides embodying key techniques.

The next step in the development of this program has been the development of reading interests and tastes. The school librarians and the reading coordinator make available listings of books which cover interests areas and ability areas. All teachers are invited to turn in their recommendations for these lists.

In each of the buildings in this school district is a reading center. To the reading center come the least able readers—not the poor learners —who remain varying lengths of time according to their progress. Each center is staffed by qualified reading teachers.

Another approach to an all-school reading program is one used by a large West Coast city. There are three parts to the program which are referred to as Basic Reading, Reading Improvement, and Power Reading. Basic Reading may substitute for a required English subject for a recommended maximum of two semesters. This course is intended for the slower learners who are reading considerably below their expectancy. Reading Improvement may substitute for a required English course for a maximum of one semester, not including twelfth grade composition. This course is intended only for students of average or above-average ability who are reading considerably below expectancy. Power Reading may not substitute for a required English course, being intended for students of above-average ability who already read well but who wish to improve their reading proficiency.*

Recognizing that the major method of learning is reading, some schools have organized what might be called a required reading improvement course for all students at a certain grade level. Such a plan may impose

*A copy of the *Study Habits Manual* may be obtained from Maine Township High School, District No. 207, DesPlaines, Park Ridge, Illinois, for 25 cents.

scheduling hurdles in a secondary school curriculum. In order to introduce a required reading course at the secondary level, one school shortened its class periods, adding one additional period to the school day. In another school, the reading abilities of ninth graders were analyzed by the principal, who then took the data to the superintendent, who was amazed at the reading needs. Consequently, reading courses in addition to English classes were organized and required of all freshmen students five days a week for one year. The less able students receive two extra periods a week. Still another school system has developed a one-year required course in reading in addition to English for all sophomores, with gratifying results. The tenth grade was designed for reading training because of the emphasis on speech in the ninth grade curriculum.

Reading Centers

In some schools the entire reading program centers in what is commonly called the reading center, or reading laboratory. The reading center is available primarily for the purpose of providing reading instruction for individuals and small groups of students in harmony with their abilities and reading needs. A minimum of one staff person is available at all times in the reading center. The writer has helped design the physical requirements of various reading centers (3). Students may come to the reading center voluntarily or upon the recommendation of a teacher or counselor. The number in the reading center at one time varies according to the needs of the students, the variety of materials available and the actual competency of the reading teacher. Instructional materials and reading aids should be available to cover a wide range of reading abilities and interests. The teacher needs materials for instruction in word recognition skills, vocabulary development, comprehension skills, speed or flexibility, reading and study habits, and spelling. Also, there should be a wide variety of hard-back and paperback books to be read for pleasure and to provide the opportunity to apply the basic skills acquired. The reading teacher needs to be familiar with a wide variety of instructional materials to select the most appropriate reading aids for each student during each lesson. To be most effective, the reading center should be known as a place to which the able as well as the less able students come to improve their reading. In one small school the ninth grade class was divided into two reading groups according to reading test information. Each group came to the reading center two times each week for one year. During the other periods of the day, the reading instructor worked

in the center with students who were referred by other teachers and some of whom came voluntarily. No student remained in the reading center for less than one semester. Also, this reading instructor analyzed the reading test information for all students in the high school and disseminated it to other teachers.

Some schools, particularly larger schools, use the reading center for in-service training of teachers. A reading center or centers are established in a city and staffed by well-trained personnel. Teachers are released on school time to come to the reading center for observation and actual experience under supervision. They return to their classroom better able to work with the wide spectrum of reading abilities in their classes, and better able to communicate with other teachers about the reading habits of their students.

To the center come students who are not reading up to their capacity from the area in which the center is located, but the primary purpose of the center is the in-service training of larger numbers of teachers.

In some communities, these reading centers are utilized in the summer for further in-service training of teachers who volunteer for summer training. They are paid by the board of education during the period they are enrolled in the reading center for in-service training.

In other secondary schools scheduling is such that reading can best be taught during the homeroom period. Inasmuch as homeroom groups are usually quite heterogeneous, this plan necessitates a wide variety of reading materials in terms of both difficulty and interests. Likewise, the effectiveness of this plan may be increased if homeroom teachers are given in-service training, for many homeroom teachers may not initially be interested in reading improvement, nor have had any experience or training in how to teach reading.

Still another plan for organizing reading instruction is centered in the study hall. In one Mid-Western high school a program of orientation, testing and supervised study, known as the Sophomore Enrichment Program (S.E.P.), makes study rooms more functional. Students are grouped according to their reading grade level on the basis of a series of reading and mental aptitude tests. Two periods a week are set aside for supervised study; other time is devoted to orientation and developmental reading. The program was tried experimentally, with such success that it is now

*Descriptions of these courses may be secured from: The Secondary Curriculum Coordinator, Curriculum Branch, Los Angeles City School District, Los Angeles, California. Ask for Service Bulletin No. SC-41.

required of all students entering the high school.

In some schools the reading program is centered in the library primarily because of the qualifications of the librarian who many have training in both library and reading skills. Under such circumstances the librarian needs an assistant to manage the library during the time the reading program is taking place. Students are referred to the program by teachers and counselors. Usually this plan results in a more individualized pattern of instruction, and students remain in the program varying lengths of time according to their progress. The instructional environment is ideal for the use of a wide variety of reference materials as well as books that may be read for enjoyment. The librarian has a wealth of knowledge about literature for teen-agers and stimulates them to read for pleasure, applying the skills developed through the more formal reading instruction provided.

In order to start a reading program in one small Mid-Western community, a group of eighteen students volunteered for a reading course. The school administration provided the facilities and needed reading materials and secured the services of a trained reading teacher from a junior high school to work with these volunteers three evenings each week for one and-half hour sessions over the period of a semester.* These students paid a small tuition fee to reimburse the teacher for this additional work. As a result this particular teacher was employed as the reading teacher in the high school the following year.

In some schools that have core curriculum programs, reading is taught as a part of core time. A reading teacher may be the one to provide this instruction, working closely with the core staff at periodic intervals throughout the year. In other situations, the core teacher himself may be the one to emphasize essential reading and study skills. Because of the nature of the core approach, this provides an excellent opportunity to emphasize the inter-relationships among all language arts skills.

There is a definite increase throughout the country in summer reading programs. The length of these programs generally varies from four to eight weeks. There are those students who need the additional reinforcement of summer reading training, as well as those more able students who are highly motivated to take time during the summer to learn to

*The eighteen students were divided into three groups of six members each. In the one and one-half hour sessions, on a rotating schedule each group did three thirty-minute reading practices which emphasized different reading skills.

read with even greater efficiency. Summer programs not only aid the students, but maximize the use of materials. There is an increase in both public and private schools of the practice of providing summer reading lists of recommended books. An increasing number of summer camps are offering reading and other language arts training as a part of the camp's program.

In a given geographical area there may be a professional reading center through which a school system may find the assistance to organize or to extend its reading program. These professional reading centers may be university or college sponsored or privately organized groups, such as The Remedial Education Center in Washington, D. C. The example with which the writer is most familiar is the Reading Services, a part of the Institute for Psychological Services, at the Illinois Institute of Technology. For more than a decade the influence of a center, such as the one at the Illinois Institute of Technology, has been a determining factor in both the public and private schools in the Chicago area. The organizational functions vary with local conditions. A contract between the Illinois Institute of Technology and the school is written for a year's services. The organizational functions always include consulting, which entails assistance with all aspects of the total reading program.* In some schools the Illinois Institute of Technology is asked to provide the qualified reading teacher or teachers who will be employed by the Institute but work in the school's reading program. The teachers and consultant are responsible for recommending and obtaining all reading materials used in the school's program. Also, they work closely with the librarian in stocking the library with a wide range of good books that vary in interest and difficulty. During summer vacation the Institute is frequently asked to organize summer reading programs. These vary in length from five to eight weeks with five days of instruction each week. The Institute tests those students who wish to enroll, counsels the students and their parents about the results, and provides the teacher and materials. Except for the initial testing, the summer programs are conducted on the school's premises. Re-testing is done there at the end of the course, and again each person is counselled about his progress. A progress report is then prepared for the school.

*Continuous evaluation is one important organizational function. Upon occasion the consultant will be called upon to administer various tests, the results of which are analyzed and used in the reading program.

Self-Instruction Programs

In secondary schools there is increasing interest in self-instruction or self-improvement programs in reading. These self-instruction programs are usually centered in the library or homeroom. Recently a few programs for self-instruction have appeared on the market. These include two Book-of-the-Month Club and two Science Research Associates reading programs designed primarily for self-instruction with high-school and college students and adults. These programs require little teacher supervision. The SRA programs are based on the premise that all reading skills must be developed together and not separately; therefore, in each lesson there are practice sessions on comprehension, critical reading, vocabulary, and speed or flexibility. Not all people have the same reading needs, and therefore in the SRA programs the students start at one of three different levels. The level at which they enter the program is determined by a Pre-Reading Index. The Book-of-the-Month programs offer a variety of interesting practice materials and selections.

Summary

Recognition of the importance of the role of reading in the secondary school curriculum makes the careful organization of reading instruction imperative. There are fundamental requirements that are basic to the effective organization of all reading programs. Variations of reading programs in action, with their distinguishing characteristics, have been discussed. Important factors encountered in organizing a secondary reading program include the following:

1. Support of the administration.
2. Structuring the reading program within the curriculum as it is now organized.
3. Support of all teachers.
4. Budget available.
5. Selection of a reading committee.
6. In-service training of all teachers.
7. Testing to locate the less able readers and encouraging students to avail themselves of the reading program.
8. Selection of the most appropriate instructional and personal-choice reading materials.
9. A reading program that encompasses the wide spectrum of reading abilities.
10. Developing community interest and support for the reading program.

11. Providing a reasonable load for teachers.
12. The most effective method of grouping students for reading instruction.
13. Exploring the use of self-instructional programs.

Finally, the strategy for teaching reading is the responsibility of all teachers and administrators. The most successful reading programs are those that are "tailor-made" to fit local needs, but are balanced and developmental in nature to extend and refine reading proficiency and to develop interests and tastes in reading in secondary schools.

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DISCUSSION

Sr. Julitta: We have been given several ideas on how to create programs in reading. As you noticed, in some cases it was a sandwiched program that a student may take after school time; or take as part of his study time.

Some of the other programs gave more important status to reading; for instance, the unit of reading within the English class (throughout high school). Now, a program like that in which a great deal of interest is created would lead the students, naturally, to think that there is something very important about reading.

I liked the idea of initiating programs in the sophomore year. Our experience has shown that at that level students are more highly motivated to work at reading than they are in their freshman year.

Self-instructional programs may be good for the student who is highly motivated. However, for many students, the self-instructional program loses momentum after a few periods, and eventually it becomes almost nothing.

As for the librarian, he certainly can do much for the program; but in a school of 1,000 students, will he have time to help those who have difficulty in reading?

Dr. Shafer: I would hope that any discussion of priorities would be comprehensive. I feel that there are some things left out of this discussion of

priorities. For example, it's quite apparent to anyone who teaches reading today that we're in an age of post-literacy; that we need to talk about reading many things other than print.

So I am concerned that this paper omits a direct statement of the necessity to deal with mass media of communication, the symbols of which our young people need to contend with in all areas of their lives. If we're talking about reading as part of the exposure to knowledge, I think we need to be concerned about this matter of post-literacy. It seems to me that we are not yet prepared to face the implications of the paperback explosion, which is part of the bulk exposure to knowledge; and the media explosion; and the increased need for critical reading. That is, when we teach young people to read books more critically, and when we supply them with a stepped-up information flow through the paperbacks, what's going to happen? They are going to read increasingly more adult books, more controversial books; they are going to want to talk about these in school. Are we prepared to give them the kind of instruction that they really need in order to copy with these books?

I think this point relates very directly to the role of the administrator as well as to the teacher. There is nothing worse, I think, than an administrator who does not support a teacher in an instance where the teacher has given instructions to a young person to read a book really critically, really comprehensively; a book which he has chosen because he can read at a fairly high level of sophistication. . . .

DR. ROBINSON: I would differ with the writer on the order of her criteria for successful reading programs. Her criteria began with 100% increase in speed of reading. I would instead place the last one first: 100% increase in critical reading—if we knew how to measure that, but we don't. However, this is what I would look for if I were ordering the criteria.

As for the five requirements for a successful reading program, the fifth may very well, in my opinion, be questioned as applied universally; that is, emphasis throughout the school and the community on the values of reading. This is highly desirable; but today we are faced with large school communities of uneducated parents who may place no value on reading. Are we to neglect these schools just because they don't meet the criteria? Surely, we cannot limit a reading program to those schools where parents already are supporting it.

Another point I'd like to make is this: Although Mrs. Simpson refers to a developmental reading program as one that permeates the entire school, the examples and emphasis have been on organizational plans in which students come to a reading center or to a laboratory, or in which the reading teacher takes over some part of the class. Now this is a *part* of a broad program; it may be the starting point if the reading teacher is gradually shifting responsibility to the content area teacher.

QUESTION: I'd like an opinion about the use of machines in the reading program.

DR. ROBINSON: I'm tempted to quote Nila B. Smith on this: she said that she had never seen a reading machine as smart as a reading teacher. It follows from that statement, it seems to me, that the value of a reading machine becomes that of a tool. It is as the scalpel in the hands of the surgeon. A scalpel never performed surgery. Likewise, the reading machine does not teach reading. It is a tool that effective reading teachers use or don't use, as the need arises and as they know what values and limitations to place upon the machine.

QUESTION: I would like a viewpoint on the idea of credit being given for reading courses in secondary school.

SR. JULITTA: I believe credit should be given to the students. In communication, reading is just as important as writing; and if we give credit for that type of communication, why not for reading?

Naomi C. Chase

University of Minnesota

3. Special Problems in Reading in Secondary Schools

THE desire to read and the appropriate skills for doing so are needed in ample supply by the maturing youth of this country. The problems that stand in the way of procurement of these assets are complex, both in school and out. Among the areas of concern is the factor of interest, both in relation to teaching and in relation to learning. Students vary considerably in this trait.

Without causing special concern, thousands of young persons move with average success through the areas of schooling which are intended to help them become functionally literate in the areas of living that they choose. More obvious are those who fail. While labeling with approval and praising the students who achieve success with distinction in the field of reading, and while increasing the reading tasks to cause the especially able readers to continue to reach for achievement, the reading teachers and the student counselors consider daily the problems of others students who display a shortage of interest in school work, work that is nearly ninety per cent reading-oriented. Whether or not interest has been displayed, a shortage in reading skills usually is present and crucial. Records of research during the years of 1963 and 1964 may surpass all others in the reporting of information about secondary school dropouts. There is no doubt that a large portion of the findings will bring reading problems under focus as causal factors.

Identification and description of the students most seriously handicapped in the areas of reading is becoming increasingly accurate and thorough in both elementary and secondary schools. Provision of reading experiences that are more challenging than technical has made the modern reading clinic where these students study as attractive as a modern library reading room. However, the solution of the specific problems of individual

students continues to be a struggle for even the most vigorous of clinicians in any setting.

Outside the special reading classes designed for the most seriously troubled and staffed by the reading specialists are many students who need help. These are the students seated in the classrooms taught by those teachers especially prepared in the fields of industrial arts, history, geography, home economics, literature, science, English, and other areas. According to Dr. Elizabeth Drews, a third of these students cannot read their textbooks. Dr. Drews based her statement on her research concerning 600 ninth graders in East Lansing, Michigan. She told those present at the October 1963 meeting of the Minnesota Congress of Parents and Teachers in Rochester, Minnesota, that only 20 per cent of the students could read at grade level; 40 per cent could read above it. The other 40 per cent were below-average readers. Dr. Drews stated further that interests varied with abilities, and, whether or not she emphasized a case for it, these young people obviously needed instruction in the skills of reading. Since it has been demonstrated that every teacher is not a teacher of reading, developmental reading classes under the instruction of specially prepared reading teachers are indicated by the East Lansing study. All other studies that bring attention to the reading disabilities of secondary school youth point out similar needs.

Developmental Reading Class Problems

Fortunately, the establishment of developmental reading classes early in the secondary school program is a growing trend, though trend and not common practice is the rule. Where such classes have been in operation for many years, certain teaching problems have been reported. Even serious problems are numerous and they vary from community to community, from school to school within the community, and from class to class as the years go by, to say nothing of the differences in problems that are indicated from student to student.

Common among the questions most often raised by teachers of secondary reading classes of a developmental nature (those teachers to whom all students, except those severely retarded, go for required reading work as a part of the curriculum for all secondary school youth) are shortage of interest in reading, lack of certain factors of commonality in materials of differing readability, and personal inadequacies of the teachers for meeting the challenge of the numbers of young persons facing them with a complex of reasons for their reading dilemmas. In short, questions of

student interest, appropriate materials, and talented personnel are vital areas of concern.

Teacher Interest

Interest in reading begins with the teacher. The teacher who likes to read, and who does read, carries to his students a part of this pleasure without realizing it. An informal comment about a good book, shared by a teacher with a student or with a class, can do more good through example than can hours of planned discussion about interest as a characteristic of a good reader! In her interview and questionnaire study of the reading habits of 92 teachers, in a typical county of New York State, Burrows (1) supports the experience of teachers who share with others their reading enthusiasm. These teachers, who read about as much in books and newspapers as other persons of the same educational background, tended to give more place to reading in classroom activities, a most significant finding when contagion is a alleged method for eliciting reading interest.

Smith and Dechant (12) list sixteen areas of teacher interest that they feel must be present if teachers are to gain help in the facts and principles concerning the psychology of reading. The value in the allusion to the Smith and Dechant source is the fact that these authors go so far as to consider the interest of the teacher a factor in student success.

Teacher interest can foster drives of energy toward the preparation of materials when apparently none exist, at least not accessibly. Take, for instance, the case of Clarence, who shows one day in class an uncommon desire to read something about a camel, something he may be able to manage by himself. A movie inspired him and he "inspired" the teacher of reading! The result is a quickly put together collection of pictures clipped from a *National Geographic* magazine with sub-titles written by the teacher, followed by short paragraphs of revised comment at a level of difficulty appropriate for Clarence. This useful customized material becomes a part of a looseleaf notebook of selections developed especially for and sometimes by him.

Nothing seems to interest six-foot George in reading. He tolerates reading class because it consumes only fifty minutes of the day, because his parents are acquainted with the teachers and with the school and are eager to have George cooperate, because the reading teacher has built a reputation of good fellowship with him, and because there is a supply of *Popular Mechanics* magazines in the back cupboard. Of all avenues

tried, the teacher has made the most progress toward George's desire to read by showing interest in his hobby. He dives for objects lost overboard from the decks of houseboats.

Hours of discussion about these adventures in home-made diving gear had encouraged the teacher to go to the library in search of books about diving. Referring George to the library was not the first step in building the use of this resource because ready accessibility to the appropriate book eliminates one hurdle to reading it. Shortly, Commander Edward Ellsberg's books about submarine diving and Captain Scott's writings about similar exploits under water preceded the reading of books by Jules Verne. *On the Bottom* by Ellsberg was the first book that this thirteen-year-old ever had read, and he was in the eighth grade when he read it, completely, with pleasure, and fairly well. Clarence and George represented a considerable outlay of teacher energy and time. Without interest on the part of the teacher, the effort would not have been made.

A sincere concern for the interests of each student in the developmental reading class may not lead to interests that translate as readily into readable writing as did the temporary curiosity of Clarence, or the lasting interest of George. (He now dives for a living). Classroom teachers of reading need to care enough to pursue reading interests beyond the normative studies already made. They need to learn whether or not the generalizations drawn from the studies fit the specific cases in the classroom. Such care demands teacher interest in young people and in reading. Such pursuit burns energy, but it is energy well spent. Small reading classes and an extra free period do encourage the individual-interest approach.

A timely collection of suggestions and sources about reading interests is presented in a college textbook by Strang, McCullough, and Traxler (13). They warn the teacher that one is never quite sure exactly what the responses to various types of interest inventory questions really mean. A combination of all appropriate and practicable techniques, together with the judgment of the teacher who knows the students, will yield about as much as one can expect as an aid to solving one problem in the developmental reading class, that of finding and using interests of young people for the improvement of their reading.

Research About Interest

Research gives the reading teacher the advantage of the findings of others with which to compare informal teacher-made surveys. Among the studies are those of Norvell (7), who reports that content was shown

to be the dominant influence affecting children's choices of reading materials in grades 7 to 12, and that sex was a highly significant factor in responses to the content of the selections he used in his study. Russell (10), in a portion of his book about the teaching of reading, emphasizes that timeliness is a factor to consider when studying interest trends; the most recent studies should give the best estimate of current trends among young persons. Clarence and Jim's interests were both "here" and "now."

Robinson (9) reports in a summary of the findings of research a consistent change in the interests of groups of children as they grow older. Group interests begin to be different for boys and girls at the middle grade level, and this difference is continued into adult life. Robinson states that adolescent boys show dominant interests in reading about mysteries, sports, recreational activities, and comics. Girls turn toward romance and stories about teenage problems. Girls at this level begin to read adult books and show greater preference for fictitious characters than do boys. Retarded readers show, in general, interests similar to those of other youth their own age.

Materials and Method

A continuous study of materials written for young people yields nearly satisfactory information on which to base purchase of teaching materials for developmental reading. Because of local differences there probably always will be demand beyond supply. There certainly always will be spontaneously discovered interests that cannot immediately be satisfied. It is well to approach the problem of supplying reading materials with a knowledge of the findings of research, with an understanding of young people, and with specific acquaintance with the students who are to be present in class.

Educators know the value of common discussion as a multi-purpose communication process, and educators also know that the range of ability in reading the materials about which discussions may occur is a wide range, indeed, in the secondary school. How then may a teacher meet the needs of reading for the varying abilities and, at the same time, provide a common core of content for discussion? What may be equally important is the question: how may a teacher meet the needs of a wide range of reading talent and at the same time efficiently provide an opportunity for developing needed basic skills in reading? Ways of planning for discussion of content, and methods of providing for group-learning of skills require foresight.

By establishing a broad theme about which most of the reading is to be done, the teacher and class may raise some questions, from which to choose the most appropriate one, when the members are ready for discussion. For instance, a study of biographies of persons who have contributed to the growth of the knowledge about early peoples of the world might propose to answer some of the following questions: What did you learn from your reading that would contribute to a discussion about the hardships of scientists who went on anthropological surveys? How did they live while on location? How did they preserve for future study the information and artifacts discovered? Where were the campsites of the most successful field studies? Assuming that such a topic might be satisfactory in the first place, considering interest, available materials, and reading range of secondary reading classes, this hypothetical situation could be a practical one, as far as common ground for discussion is concerned.

A study of the experiences and personalities of men and women who have faced life with unusual courage against uncommon odds might be undertaken with general questions as follows: How did other individuals help this person to serve his cause? Compare the individual in the selection with someone suggested to you from from literature you already have read. What sacrifices did the person make in order to achieve his goal?

The writings in the professional literature about the problems of uniting the thinking of a group of students give further insight into the problem. Handlan (3) discusses the guidance of conversation of students who have read many different sources. Squire (12) describes the situation that one finds when one tries to individualize completely the teaching of literature. Reeves (8) explains the role of the gifted student in the reading class or literature class setting. The Curriculum Commission of the National Council of Teachers of English (2) takes the historical look at the problem and gives suggestions and solutions for making homogeneity from heterogeneity, should this be the desire of the teacher.

To find commonality for skills development is a somewhat different problem from that of finding common questions about content. In some ways it is more difficult than to find broad topical questions for discussion. Some developmental reading teachers have arranged to have all students read materials that represent, by their structure, similar skills-development possibilities. This may mean that they all read the same selection, some students with special help. If the skill to be considered were that of finding main ideas sufficient to break a selection into chapters and to

give each a title, all might focus on the results of the work of one another in their search for the best possible sequence. If the skill were to learn how to make inferences from given content, a different selection question arises. Where only a few copies of a selection are available, the materials may be passed around and a time limit may be set for the preparation of the paper to be discussed.

While many teachers of developmental reading prefer to scout for their own materials to use in their classes, those appropriate for the development of specific unit themes, there are others who use materials organized and prepared for the purpose of developing reading skills. It is not unusual to find teachers using combinations of personally collected materials and textbooks, or even combinations of textbooks.

The needs of the students in the classes, the availability of the materials, and the personal familiarity of the teachers with the materials in the field all operate to produce the variations in organization of materials that may be found in the hands of students.

Textbook materials usually consist of carefully graded selections, short expository or fictional items related to one of several themes in a book or handbook. The themes have been chosen to fit the interests of young people today, and the themes usually are based upon findings of interest surveys and studies. Such organized teaching materials are a continuation of the general plan of organization of selections used in the elementary classrooms for the teaching of reading. There, too, the topics have been chosen because of what is known about children's interests as sampled over the country by surveys and studies. The longitudinal look at interests, pre-school through secondary school, is typical of the long look that reading specialists give to all of the continuous strands of the characteristics of the activity of reading. There is no specific culmination point for interests or skills of young people, sixth grade, ninth grade, or grade twelve!

Interest and Life Goals

Sometimes there is cause for wonder when teachers and researching scholars at work on the problem of eliciting interest in reading in the classroom find such interest high in the primary grades, at a lower level in the intermediate grades, and even lower at the early secondary school levels. Observation of classrooms, and the individuals in them, yield some facts to consider. The primary child is excited about the very act of learning to read. This is a new skill, and in a literate society, it is a skill to be attained. This motivation wells through third grade and fourth grade,

at which time many teachers consider that the young children already know how to read; they are now ready to use their accomplished skills for gaining information and pleasure. This point of view has been credited for the misconception, "in the primary grades we learn to read; in the intermediate grades we read to learn." Perhaps, in this quotation, there is a clue to the cause of the sometimes slump in skills development among intermediate grade pupils. These are the children who are about to become the students of the seventh grade developmental reading class, a continuation of the 1-12 reading plan.

As materials become more complicated in readability, frustration rises. The frustration level becomes a major irritant for many young people in the junior high school where quantities of reading materials become greater, when time for accomplishing the reading is shorter, and where instruction in the continuing development of reading skills has only begun to appear. Current periodicals are picking up the cries of frustration and building them into editorials, feature stories, and news items. A selective reader of both popular and professional literature will see frequent reports of local and national concern, and the reader will be only a little surprised to find the lack of reading skill a contributory factor even in items headlining secondary school dropouts.

School Dropouts and Reading Problems: Related?

The status of reading among the young persons who drop out of school is a current focus for study and research. This year and the next will not close without a broader, if not deeper, understanding of the problem. How to identify and provide for the reluctant, slow, or disabled reader, among both the avantaged and the disadvantaged children, in the elementary school might well be studied by all teachers, whether or not they are immediately concerned with children younger than twelve years of age. Reading problems have a way of snowballing, and the junior high school teacher of reading is among the first to feel the results.

Perhaps the employment problems of youth may have a motivating influence on reading development. The primary grade child does not anticipate employment for many years, but reading is an exciting new skill; the intermediate grade child does not look definitely ahead to specific employment, and reading is not an exciting new skill; the junior high school student does look ahead to choices of professions, and he is not entirely realistic in his planning; the senior high school student feels ready for employment, would like to be ready, but is he?

In our literate society it is necessary to be able to read in order to complete secondary school and to be graduated. Today a high school diploma is worth more than years of experience. The completion of the high school curriculum may have a monetary value of around $2000 a year to a young man. Twenty years ago, experience was worth more than the certificate of graduation. The United States Bureau of Statistics has figures that underline this reversal of situations, and technological change plays no little part in the upset.

The National Educational Association (5) announces plans which promise some figures and findings at the completion of the special project on school dropouts, established as a project in 1961 with a three-year schedule, under a Ford Foundation grant. The project provides a consultative and clearing house service for school systems trying to develop programs to keep potential dropouts in the classroom and to encourage those who already have left school to return. This year the project will hold symposiums on curriculums for potential dropouts and on training programs for teachers working with them. It can be assumed that developing functional literacy will be a topic of concern. In another National Education Asociation publication (6), 75,000 to 100,000 dropouts were reported to have been returned to school in 1963.

The teaching of reading became the problem of those who report a project in Cook County, Illinois, in which there was a successful attempt to wage war on illiteracy. Raymond M. Hilliard (4), Director, Cook County Department of Public Aid, described the experiences of his department for *This Week Magazine* in May, 1963. The case study he reported makes encouraging reading for educators who find, late in his report, the following comments:

> ". . . Course work starts with basic literacy training and goes through the curriculum required for an eighth-grade certificate, but it doesn't end there. Because we know that better reading skills can help anyone get ahead, we offer work leading to a high-school diploma, and encourage our people to stay on even after they find jobs. . . ."

Picking up the challenge of "Each One Reach One," a motto for those who join the National Education Association in the drive to stop dropouts, recipients of the 100,000 letters sent to educators in July, 1963, went to work. At the University of Minnesota the Minnesota Student Associations' Educational Affairs Commission found volunteers for such a cause. They went out to meet some of the youth who had dropped

out of school, became acquainted with them, and are now pursuing their plans for stemming the dropout tide. It can be hoped that social acceptance will be followed by appropriate leadership for those who need to slip back into educational channels that will enable these students to improve their reading skills.

Reading: A Lifelong Habit?

In an inspiring editorial in *Saturday Review*, Richard L. Tobin (14) describes the habit that reading can become. He phrases well the view that he takes of youth who have not acquired this habit which, once adopted, becomes a lifelong possession: Mr. Tobin finds, for himself, as do many, a sadness in the fact that a large segment (he says "whopping") of the exploding new teen-age generation never really ends anything unless forced to do so. In his words,

> "Reading is a habit. Once you've got the habit you never lose it. But you must somehow be exposed to reading early enough in life to have it become a part of your daily routine, like washing your fact or breathing. Many an unfortunate grade-school child in our highly seasoned, electronic, picture-conscious age has never been exposed to the reading habit and cannot, therefore, read without effort. Some modern children seldom if ever read for fun. Like muscles that are almost never used, their concentration and interest give way quickly. . . ."
>
> ". . . Reading is one of the most private of satisfactions. Reading is completely portable, perhaps the handiest of all art forms. Reading offers a tremendous subtlety unavailable through sound or pictures, for reading stirs the imagination as nothing else. Reading is also a communicable habit: children will read if their parents always have a book or two going and habitually devour newspapers and magazines. . . . We feel sad when we realize there are some who do not know its [reading's] glories and its fun. . . ."

The complex problems of reading are present, here and now, today. The most vigorous attacks upon the problems seem to be reaching the people of the nation who may, directly or indirectly, have responsibility for solutions. Certainly, everyone, educators and lay people alike, are interested. They need to realize that the continuous process of growth in reading begins early and never ends during a lifetime. The secondary teacher of developmental reading joins the elementary reading teacher in a continuous effort to assist the youth of the nation to attain the vital skills of reading.

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DISCUSSION

SR. JULITTA: One of the major problems emphasized was the problem of reluctant readers. What are we doing about them? How can we help them? Some suggestions were given and I would add these: using audio-visual aids in which lessons can be taped; using guide questions which show the student how to think in relationships.

The idea of teaching a skill using a large variety of material is also excellent and is a great help to teachers. We can do it easily in some of the examples given. However, generally I question whether one teacher alone can manage this if she's expected to do it while teaching five classes.

In reference to the drop outs, my question is: what are we planning for the 75,000 or 100,000 that are coming back to us? Do we have a curriculum that's going to interest them? Maybe we can get some help from one of the other discussants as to what kind of a curriculum we should prepare for those who dropped out, who could not read, and who are back with us. While they are learning to read, what are we giving them and how are we helping them?

DR. SHAFER: I'm interested in this question about curriculum. Basically, it is related to the problem of our changing culture. Someone asked me to explain what I meant by the term *post-literacy;* what I meant is simply that print is not the sole medium of communication any longer, as it was when our country was settled.

We have some evidence that teenage culture has changed very rapidly from the teenage culture that we knew. In our present teenage culture, oral communication is much more important than print; so, the teenager responds in a very dramatic way to forms which are other than print.

Now, the problem here then is to get with it; it's with us. We need to bring into our experience all forms of mass communication. In the curriculum called English "S," which the Detroit Public Schools developed, there was a little note to the teacher about the reluctant reader and a quiz that the teacher was asked to take. The first question—and this was a quiz on which all of the students usually scored 100% and all the teachers flunked—was: who is the main character in the television program called *The Untouchables?*

I think that here is a little lesson about our own world, our own communication world; that print is very important to us and always has been, but even so, we must make a great effort to enter the world of the teenager and to discover the forms of communication which are important to him; and to help lead him from where he is to where we wish to have him go, that is, toward a sophistication with print, but with a realization that print is changing its role very rapidly in our electronic world.

DR. ROBINSON: I was glad to hear you complete your statement about meeting these people on their level and leading them somewhere. This morning

I was under the impression that you were just going to meet them.

DR. SHAFER: Oh, no, I'm a leader.

DR. ROBINSON: I'm glad to hear that. I'd like to underline the damage done, I think, by the misconception that Dr. Chase mentioned about learning to read in the primary grades and reading to learn thereafter. If we adopt this policy, and some people still do, I think we're going to continue to be in all sorts of difficulties; and this may indeed account for some of the problems that we face in junior high schools.

I'd like to suggest a few other special problems of reading in the secondary school. First, there are special problems to be considered certainly for average and superior readers. As she pointed out, studies show that many students do not read a great deal. We know we are turning out adults who do not read a great deal. One study showed only seventeen per cent of adults were reading a book at any given time. Is book reading an essential habit for students to take into adult life? If so, how can we give the high school reading program the necessary wherewithal to contribute to greater satisfaction from reading?

Many adults who watch television feel guilty about using their time that way. They associate relaxing with TV, in contrast to self-improvement associated with reading . . . "My conscience might say I spend too much time watching television because I get behind on my reading; probably won't stop though." However, nobody says the opposite—it is hardly conceivable—"my conscience says I spend too much time reading because I get behind on my television."

Now, in this I see an attitude that we have created in high school students, the attitude of respecting reading without using it. We may have inculcated the values of reading without the interests and abilities to accompany them.

Secondly, I think studies have been made in the last decade that reveal that those who read well, according to standardized tests, sometimes do not read really well; particularly, they do not read critically and do not use many of the higher level reading skills.

Are we failing then to develop a dimension which was described recently by Frank Chase when he discussed two levels of literacy? Dean Chase described the higher level illiterate, the individual who could indeed reading according to standardized tests, but who did not use the material he read to improve himself and his society.

SR. JULITTA: Another problem came to my mind when it was mentioned that students are frustrated by the amount of reading which they are asked to do. This particular problem grows out of lack of flexibility in reading. We fail in the upper grades to give children the idea of changing their rate and changing their technique of reading according to the situation. From the lower grades on we should teach them to establish purpose before reading and to decide what they want to know. I think we can help them to overcome this frustration; that is, help them to develop into flexible readers.

DR. CHASE: I know that Dr. Shafer has a special interest in mass media and brings this up to us in his comments; and I think it would be quite appropriate to report here some research done in the School of Journalism at the University of Minnesota on newspaper reading time. I think it's appropriate here because we all know that reading is not necessarily limited to hardback books. Adults over a ten-year period averaged thirty to thirty-five minutes for reading the morning paper; they gave forty to forty-five minutes to the afternoon paper; and they gave from sixty-five to eighty minutes to the Sunday paper. Youth aged twelve to eighteen gave fifteen minutes to the morning paper; twenty to the afternoon paper; and forty to the Sunday paper.

DR. SHAFER: I'm very glad that you mentioned that because I think there are other things that we need to look at as regards newspapers. In New York City the other day we lost a newspaper. We lost the *New York Mirror*. The *New York Mirror*, like the *Post*, the *News*, the *Journal-American*, is a newspaper that has been estimated to be about the fifth or sixth grade readability level. But the newspapers that have been expanding are the New York *Times* and the *Herald-Tribune*.

Also, we have other interesting statistics on adult and teenage reading. The membership in teenage book clubs is up. The sale of paperback books in school book stores is up. Library attendance on the part of high school students is up. Now, as I look at this picture, I wonder if we don't have good evidence that teenagers *are* reading and that our job is essentially to get them to be critical, more selective.

SR. JULITTA: It is my experience that the students who can read easily are the ones who engage in reading a great deal. If we can build up their skills to a high degree, students are going to read.

Evelyn Jan-Tausch

South Orange-Maplewood
School District, New Jersey

4. Teaching Developmental Reading in the Secondary School

"DEVELOPMENTIAL reading" designates a sequential plan of instruction, the purpose of which is to produce the skilled and enthusiastic reader. It is concerned with maximum progress for every student: slow, average, and superior. While its content is, in general, based upon the concepts and skills judged appropriate for the various grade levels of the curriculum, in actual functioning the developmental reading program provides for both vertical and horizontal growth in that "new learnings are built on previous learnings and the base is broadened constantly." (4) There is a shift in emphasis as the child progresses into the upper grades away from learning to read as an end in itself toward utilizing reading as the essential learning tool. Secondary curricula, requiring the efficient use of reading techniques unique to various subject fields, exert strong demands upon the reading program for purposeful content, effective methods, and positive results.

Long Range Goals

Regardless of the manner of implementation, reading instruction in a developmental program must be based on planned objectives if content, method, and materials are to prove appropriate and to achieve desired results.

Long range goals of the secondary reading program include:

1. Developing critical thinking in reading.
2. Developing the ability to read and think in the language of the subject areas.
3. Developing the reading vocabulary.
4. Developing effective work-study skills.
5. Developing judgment and skill in the use of a flexible reading rate.

6. Developing reading interests at increasingly mature levels.

These goals apply to all students in the developmental program whether they are slow learners, average, or superior. The major differences involved in the reading instruction of children of varying abilities and achievements are to be found in materials and methods rather than in curriculum content and purpose. Critical thinking, for example, can and should be developed with material of any level of difficulty. Vocabulary work might, for one group, require review and re-teaching of phonics and syllabication whereas exercises in making analogies, building word families, and delving into the etymology of words would prove more worthwhile with another class. Regardless of potential, however, all pupils would profit from certain common experiences, and every child should be taught so that he may achieve his optimal success in learning to read.

The methods and materials used in secondary developmental reading programs are determined largely by such factors as: (1) class size; (2) class composition (i.e. heterogeneously or so-called homogeneously grouped); (3) the professional training and competence of the teacher; (4) the interest and cooperation afforded by the administration.

In a heterogeneous group, the teacher generally takes one of two courses, his choice depending largely upon the amount of training in reading instruction he has had. He may decide to teach to the average level of the group and have all students use the one reading book and do the same exercises, or he may attempt to provide diversified instruction on multi-levels. For this latter purpose he will utilize many self-help materials. Skillful planning, high professional competence, and an abundance of materials are needed to keep this kind of program operating successfully. Class size, length of period, and the number of differentiated levels of concept development represented will determine how much individual attention any one student may receive. If such a program suffers, it is from a kind of "assembly line-itis" to coin a term descriptive of the situation where student responses are mainly limited to one word answers, multiple choice selections, matching vocabulary items, etc. Group discussions, wherein conclusions are reached and inferences drawn concerning the material read, might be omitted almost completely unless definite provision is made for their inclusion by a teacher who understands that thinking and language activities which help students order, relate, and integrate experiences must continue to be an integral part of the secondary developmental reading program. Regular opportunities for free play of thought and oral self-expression upon a commonly shared

reading experience must be provided if reading is to fulfill its primary function of helping all of us grow more human through nourishment of mind and spirit.

While the teacher of the secondary class grouped "homogeneously" may find it practical and rewarding to work with the whole group as a single unit, it is necessary to make sure that such a reading program does not become dominated by materials and methods deemed suitable in terms of achievement grade levels. When this happens, there is a danger that some curriculum goals will be sought at the expense of others. Specific examples of this can be found in those secondary reading classes where (1) all the students being evaluated by test scores as "superior readers," speed reading is emphasized almost exclusively; and where (2) all the students being assessed by test scores as "poor readers," drills on phonics, syllabication, and sentence completion, are used constantly to convince the already reluctant reader that reading certainly is *not* fun!

If good teaching cuts restlessly across all methods, good reading instruction at the secondary level needs equally well to cut knowingly across materials to insure achieving all the goals of a truly developmental reading program.

Critical Thinking

The normal psychological growth of the child making the transition from elementary school to the secondary includes both the need and the capacity to criticize, to accept, or to reject that part of his environment which is the product of the authority figures of his world. His awareness of his environment comes to him through communication media. Much of his response takes the same form. Critical thinking in reading is a major objective of the secondary school developmental reading program and contributes to the individual's ability to evaluate his environment in terms of its meaning for him and for the society in which he is to live.

Gray and Rogers (2) describe the aspects of reading achievement which contribute to critical thinking and which can be taught:

I. Responses indicating the reader's grasp of meaning.
   A. Grasp of literal sense of meaning.
   B. Capacity to enrich one's grasp of the literal meaning through the recognition of meaning implied but not directly stated.
   C. Capacity to clarify and enrich one's grasp of the literal and implied meaning through recall of appropriate related experiences (direct or vicarious) and their association with the content read.

D. Capacity to enrich one's grasp of meaning through the use of the literal, implied, and related meanings in reaching conclusions or making generalizations not stated by the author.

II. Responses indicating the reader's evaluative reaction to the material read.

A. An attitude of inquiry concerning such items as the value, the quality, the accuracy of what is read.

B. A tendency to suspend judgment and to use rational standards in reaching conclusions about the worth of what is read.

III. Responses indicating the reader's application of the material read.

A. Recognition, implicit or explicit, that the ideas acquired may have personal or social value.

B. Insightfulness, breadth, and penetration in making use of the ideas acquired.

In choosing material to be used in teaching critical thinking, it is necessary that the content include some aspect of problem-solving and that there be provision for agreement or disagreement. There must be opportunity for involvement of the reader. The reading matter must interest him. It must enhance or threaten his self-concept and therefore cause him to react to its implications.

After the qualifications and the bias of the author have been established, support and substantiation for the reader's conclusions must be found in the reading material. Questions raised by the reading for which no single correct answer can suffice contribute to the development of critical thinking, especially when the teacher refrains from imposing his own opinions on the students and encourages them to express themselves within the framework of logical thinking and articulate speech. Much of the teaching of critical thinking in reading is made possible through the creation on the teacher's part of an atmosphere genuinely conducive to inquiry, reflection, and respect for one another's viewpoint.

At the secondary level, newspapers, magazines, poetry, plays, and advertising copy provide excellent reading material for developing critical thinking. It is important to remember, however, that critical thinking should not be limited to the formation of opinions pro and con regarding the ideas set forth by the author. Interpretation of symbolism, understanding of propaganda techniques, awareness of the balance required between style and meaning intended or sensory effect, sequential development of character and plot, relationship of the ideas expressed to the

reality of the reader's world, all of these are important facets of critical thinking to be developed. Any reading experience which causes the student to question, compare, interpret, generalize, or draw conclusions can be said to develop critical thinking in reading. Within this frame of reference, creative reading which results in new behavior such as the student's writing a poem, an original story, drawing an illustration, or any activity stimulated by and interpretative of his personal reaction to the printed symbols can be viewed as a special form of what remains, basically, critical thinking.

Ability to Read and Think in the Language of the Subject Areas

Although most educators agree with Karlin (3) that secondary school teachers in the content areas who require students to read in their subjects in order to acquire skill or knowledge should be able to teach the reading skills needed, we have not yet arrived at the time when this is generally so. The reading specialist can help the content teacher through: (1) in-service training conferences; (2) supplementary instruction of the children experiencing difficulty; (3) incorporating into the developmental program instruction in the special reading skills required by the various subject areas.

Strang and Bracken (7) list three special aspects of the teaching of reading in every subject:

1. The general attitude or approach to the kinds of reading required in the subject.
2. The technical or special vocabulary of the subject.
3. Certain specific reading skills needed in the subject, as for example, the reading of maps in social studies and the reading of directions in the shop or science laboratory.

Most subject-matter teachers assign one or more textbooks to the students to be read independently. These books are usually written at approximately the grade level of the group being taught and are often above the instructional level of many in the class. It should be expected that students who experience difficulty in reading recreational material written on their own grade level will be frustrated in attempting to learn from the grade textbooks.

It is practical then for the reading teacher to examine copies of the textbooks used by his students for the purpose of determining their specific reading demands, and to include in his reading program instruction in those skills that will be most helpful. Nila B. Smith's *Be A Better Reader*

Books IV, V, and VI, for example, might be studied by the reading teacher to determine the different organizational patterns found in the chapters of science, mathematics, social studies, and literature texts. Once this examination has been made, the reading teacher's job is to teach the particular *techniques* needed to read chapters conforming to these patterns. It is *not* the reading teacher's responsibility to teach science or social studies. Discussion in class of the characteristics that enable the student to recognize such patterns as "Problem-solving" and "Cause and Effect," and practice in using the special reading skills required by the nature of each pattern, should be followed by direct application to the chapters of the students' textbooks. The success of this particular phase of the developmental reading program at the secondary level will depend to a large extent upon the amount of careful planning done by the reading teacher to make the skills practical in terms of the actual textbooks read by the students.

Students should be led further to see that mastery of the vocabulary items unique to each subject area is an indispensable aid to better comprehension. For the developmental reading teacher to undertake the teaching of lists of special terms for the subject areas, violates, in the writer's opinion, one of the basic tenets of good reading instruction. Words are to be taught in meaningful context, and science words are best learned in the science lesson, math terms in the math class. What the reading teacher is particularly able to do is to use the vocabulary taken from the textbooks to teach the word recognition skills that the student needs. Then the purpose becomes, not one of having students memorize terms and definitions, but rather one of having them adequately prepared with workable ways of unlocking the new terms still to be met in further reading. It is a *method* or *methods* that the reading teacher can impart, rather than the content of a particular subject area.

This last point deserves amplification inasmuch as all secondary instruction in reading in the content areas is properly concerned with teaching the student effective *methods* in reading subject content and should not be confused with teaching the content itself. At the secondary level, this last is the rightful responsibility of the subject teacher.

Reading Vocabulary

It is generally agreed that vocabulary is best developed through reading and, therefore, any extension of reading in terms of diversity and quality should, of itself, insure corresponding vocabulary growth. When we

supplement extended reading with increased opportunities for the student to participate in planned discussions, we provide him with the basis for recognition of the visual symbol by first making sure the word is part of his auditory and speaking vocabulary. At every level of reading instruction, the technique of introducing (orally and visually) and clarifying unfamiliar key vocabulary items in the prereading discussion must be systematically followed.

Research has conclusively proved that words taught in isolation from a list are seldom made part of the student's permanent stock of recognizable words. Words are learned best when they are introduced in conjunction with meaningful context and when they have emotional overtones for the learner. Repeated meeting of the new words in varied context enriches their meaning and defines their limits.

The student who participates in many communication activities (listening, speaking, reading, and writing) is more likely to develop his vocabulary than the one who does not, but providing these activities to the extent needed for all students to become highly proficient in the communication skills is quite frequently beyond the scope of the reading teacher. Directed instruction in vocabulary development is necessary.

Analyzing the structure of words and learning the meanings and functions of prefixes, suffixes, and roots contribute to the student's ability to unlock new words and gives depth to their meaning. Tracing words to their origins lends interest to word study and affords secondary students needed insight into the living nature of language. Cartoon strips made to illustrate the changes undergone by a word as it adds a suffix or a prefix or passes from one language to another, illustrated family trees of words, and other expressions of student ingenuity make interesting bulletin board displays and provide needed opportunities for creative involvement.

Encouraging the use of the dictionary as a means of determining exact or multiple meanings of words can often be made more palatable to the student through the use of games such as anagrams, crossword puzzles, and double-crostics. Classrooms which are liberally supplied with dictionaries pay dividends in that students may become accustomed to using the dictionary frequently, quickly, and accurately.

Word analogies, which involve both understanding the concept of relationship and training in the ability to shift mind sets as needed, are a necessary factor in vocabulary study at the secondary level. Word analogy exercises are used with increasing frequency to evaluate ability

to think abstractly. Students are quick to recognize that, while a large vocabulary is not the sole requisite for success in working analogies, it is a basic requirement.

Secondary students are usually receptive to suggestions about keeping written lists of new words met in their reading. Sensitivity to the emotional overtones of words may be developed by skimming selections read for words that produce feeling of sorrow, joy, anger, etc. Planned learning experiences are required in the teaching of foreign phrases, idiomatic expressions, and technical terms.

Effective Work-Study Skills

Skills in using the dictionary, in reading maps, tables, charts, graphs, in locating pertinent subject matter through use of the table of contents and the index, are demanded daily of the secondary student as he meets the requirements set by various subject teachers. In addition, he must know where and how to locate reference materials, be able to read with purposeful selectivity and good comprehension, retain all essential facts, and be successful in organizing thoughtful reactions to his reading into well-structured and articulate reports.

While it is safe to assume that certain of these skills have been taught since the elementary grades and will continue to be taught by the secondary subject teachers, the developmental reading teacher assumes responsibility for teaching all of these work-study skills whenever students exhibit deficiencies, or when examination of the subject-matter courses of study reveal no provision for their teaching.

Beginning secondary students require instruction in the use of the high school dictionary. The secondary student should be able to recognize alphabetical sequence, use guide words, identify root words in both inflected and derived forms, select the definition that fits the context, and realize the differing purposes of comma and semi-colon as used in dictionary meanings. He should be capable of using the pronunciation key, the etymology key, and responding correctly to the accent mark. He should know that geographical and biographical information can be located in some dictionaries and understand also the limited nature of this information so that he uses it appropriately.

The secondary school curriculum makes constant demands on the student to consult reference materials of many types—encyclopedias, almanacs, atlases, periodical indexes. Effective use of these aids by students depends upon their knowing what sources are available, which

ones to use, and how to select material relevant to the given assignment. The reading teacher may provide each student with a resume of resource materials such as can be found in *The Library*, a service bulletin of the Reader's Digest Educational Division. This affords the student a comprehensive survey of the many types of reference materials and the particular purpose for which each is designed. Students should be asked to check their school and public libraries to ascertain which of these reference materials are available. Assignments made in the content classes can be discussed in the reading class in terms of: (1) What reference books prove most productive in assignments of this kind? (2) What are the *key words* in the assignment as made? This last procedure should be specifically directed toward helping the student recognize the point or theme of his assignment so that he will select information which is pertinent.

Instruction in outlining and note-taking as given in the reading class should emphasize awareness of the logical organization arrived at by use of key words, main ideas, and clusters of meaningful subordinate details. The organization of ideas predicates relationships existing among them. These relationships, the student must be guided to understand, carry cues within them which not only help him remember the ideas so associated, but contribute greatly to his ability to recall and report on what he has read.

Teaching the work-study skills includes developing concepts relative to the student's *attitude* toward his reading. He must learn to analyze first his purpose for reading any particular material and then knowingly select that method (reading for recall, reading critically, skimming, etc.) which best suits his objective. In most cases the student's purpose will be affected by his instructor's purpose. This may be determined as a result of the teacher specifically stating the objectives of the reading assignment made, by the student relating the immediate assignment to the rest of the course, or by evaluating the assignment in terms of ones made previously.

One of the work-study skills that should be developed to a high level of proficiency in the developmental reading class is the use of the SQ3R technique. For most secondary students the ability to survey, question, read, recite, review, report will be basic to success in the high school curriculum.

Flexible Reading Rate

Not only has his rate of comprehension become a major concern and

matter of status to many an American adult reader, but the developmental reading program at the secondary level that today fails to include "speed reading" in its instruction would be hard to find. Far more important than any one particular rate a student may achieve, however, is his need to learn to adjust his rate of reading to suit the type of material and the purpose for which it is being read. It is not unusual to find that good readers tend to adapt rate to their reading purpose and the difficulty of the material while poor readers read all material at approximately the same speed.

Mechanical instruments to increase reading rate are more commonly used at the secondary level than in the elementary grades. These devices attempt to correct or improve eye movement, directional attack, and visual acuity. To the extent that the student's rate of comprehension is affected by his ocular habits, the instruments may be effective. More often, however, one's speed of comprehension is a matter of interpretation, assimilation, and reaction to the message initiated by the visual symbols. Interest in a subject or familiarity with it can, therefore, increase the speed and understanding with which it is read. The readability level of the material insofar as both complexity of language and difficulty of concepts are involved also affects the reading rate.

Understanding of all the variables that impinge upon one's reading rate enables the teacher and the student to avoid thinking in terms of one fantastic rate for all material—*King Lear* and *The Hardy Boys* reduced to the common denominator of 2500 words per minute! It is quite possible that the greatest need where reading rate instruction is concerned has to do with clearing up some of the misconceptions that are being forced upon students by television and press accounts of speed reading marvels.

Students who desire to increase reading rate should understand that they will have to do a great deal of daily reading. Rate increase requires regular practice on materials that develop systematically in difficulty and length. In many secondary developmental classes it is established practice to begin the period's work with short timed readings, each followed by a comprehension check. Individual charts kept by the students help them to keep a personal record of their progress. When the student maintains a record of his reading that shows a comprehension score plus number of words read per minute, rate of comprehension usually increases.

One of the techniques that students should learn to use for increasing rate is that of surveying before reading. In the survey, the student reads the title, examines whatever illustrations are included, reads the summary,

if one is provided, and, in general, assumes the mental set necessary for accelerated comprehension.

Skimming and scanning are generally included in speed reading instruction. Skimming is the quick perusal of a page, an article, or a book to obtain an overall impression of the whole. Scanning is searching through reading material to locate a particular fact, quotation, name, etc. Practice in these techniques is valuable to the secondary student who will employ both as supplements to his work-study skills. The secondary teacher will find those scanning exercises practical help that require locating specific information in the dictionary, the index, table of contents, etc. Skimming that utilizes textbooks or encyclopedias for practice can provide the student with needed skills in mentally summarizing for main ideas. Duplicate printed paragraphs, one of which has all but the key words blocked out, can be made by students. Exchanging them with one another in class permits one student to check on another's ability to derive the correct sense of the paragraph from reading only the key words. This skimming lesson reinforces the training given to look for key words that convey the sentence or paragraph thought.

Reading Interests

The true interests of students are usually well established by the time they reach the secondary school. The years of childhood are the years of strong identification with people, things, and ideas. This in no way denies the teacher the opportunity to use students' interests to increase their desire to read extensively. It behooves the teacher to assess the interests of his students. This he can do without too much difficulty if he first accepts the concept that interests are the expression of the individuality of the student. "Self and interest are two names for the same fact," says John Dewey (1).

Although there are common interests at each stage of growth, it is necessary to determine the personal interests of those individuals who limit their reading to that assigned by their teachers.

One way of discovering individual interests is by permitting students to express themselves freely in whatever form they can. The content of pictures they prefer, the pictures they draw, the subject of the stories they originate, and the content of the stories they enjoyed are all ways of determining individual interest. The subject of any free expression of the student is significant in assessing his individual interests. To the extent that it can be determined and the individual's interests made known to

the teacher, it becomes important that reading materials that help the student express these interests either be made available or called to his attention. This requires that the instructor be familiar with a wide range of young people's literature, and that public and school library facilities be adequate to the demands that will be put upon them. The school librarian is an essential partner of the reading teacher insofar as this stage of the program is concerned.

Class periods devoted to discussions of outside reading done by students often result in building interest in certain books. Candid lists of student reactions to books yield needed information and help build up a reservoir of book titles to be recommended.

Important as all the goals of the secondary reading program undoubtedly are, there are very few teachers who do not feel that developing a student's interest in reading remains their chief consideration.

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Discussion

Dr. Robinson: I must say that this is an excellent paper. I've been puzzled a little by one point. I think we assume that we know almost exactly what the systematic development of skills on the elementary and secondary level is; and yet, in perusing the research, I find very little to support certain kinds of sequences over others.

If the opportunity arises, I would be interested in knowing how the sequences given in this paper were established.

Another point I should like to underscore is this: we too often see secondary reading teachers who tend to test rather than teach. They make assignments; they provide questions and mark them right or wrong; and then they do it all over again. Merely posing questions is not teaching.

So often, I think, we miss our best teaching opportunities when questions are answered incorrectly. Any high school student can mark a child's answers right or wrong by using a key as a guide, if that's all there is to it. The importance of *discussing* the different responses should not be overlooked.

DR. SHAFER: I liked the emphasis in this paper on the processes of inquiry. . . . Let me add one further word about the dictionary. We need to take a look, I think, at the process of dictionary-making. Nowhere are the results of this process so evident or so revealing of our attitudes toward the English language, than in the controversy over Webster's Third International Dictionary. It seems to me that we need to bring this controversy into the classroom, and subject it to scrutiny. We need to examine the process of dictionary making so that students can understand how we have developed sensitivity to words which we are currently using.

SR. JULITTA: I wonder if Mrs. Jan-Tausch could tell us how this reading program is administered.

MRS. JAN-TAUSCH: In our system we have two junior and one senior high school, and all three schools have reading programs. In both junior highs, every seventh grade student takes reading two days a week, as a separate program in addition to English. In February, the reading teachers go over the children's records and make an honest evaluation as to whether these children should take either French or Latin, or if, they should continue with another year of reading. Those recommended for further reading instruction receive three periods a week in eighth grade. This cuts us down to four or five classes of eighth graders in each school.

Then, in ninth grade we offer an elective in reading. It has been tremendously popular. We have had each semester fifty to sixty ninth graders selecting reading. They get one and a quarter credits; they come for one semester, five days a week.

At the senior high level the program is a little less affluent, shall we say, in that those students who are doing poorly in English classes are turned over to a reading teacher for a period of three weeks. What he can do in three weeks I don't know, but he does his best.

HENRY A. BAMMAN

SACRAMENTO STATE COLLEGE

5. Reading in Science and Mathematics

AT all levels of American schools, children and youth today are being encouraged to include in their programs of study an increasing emphasis upon science and mathematics. This emphasis has come about partially because of strong public interest engendered by modern nuclear discoveries and space developments and partially because of the widely publicized shortage of competent personnel for positions in industry which demand training in science and mathematics. Throughout the nation we have made great strides in developing modern curricula for these two important areas; through the efforts of the National Science Foundation's Course Content Improvement Program and similar granting agencies, thousands of teachers in our secondary schools have received financial assistance and excellent training in the development of courses and instructional materials. There can be no doubt that we have today more well trained scientists and mathematicians than ever before. However, the emphasis in these training programs has been upon the *substance* of new courses in mathematics and science, with little attention focused upon the secondary school student and his skills for understanding and applying the knowledge of these areas.

Despite a general strengthening of programs for developing basic reading skills in our elementary schools of the nation, we have made little progress in training teachers to teach specific reading skills for the content areas. A survey of college catalogs will indicate that there are few teacher-training institutions that offer a course in reading which is designed for secondary school teachers of the content areas. Still, discussions with secondary teachers of their problems of instruction invariably lead to expressions of concern about the deficiencies of their students in basic reading and study skills.

It is the purpose of this paper to examine the problems which are basic

to reading in science and mathematics and to propose courses of action which might be taken to solve these problems.

Difficulties in Reading Science and Mathematics

There are many reasons why students who read reasonably well in other content areas fail to read well when they read in science and mathematics.

1. Young readers have been accustomed to reading materials of narration; they have learned through extensive practice in basal readers and social studies materials to interpret description, plot, characterizations, and definite patterns of sentence and paragraph construction. The expository language of textbooks in science and mathematics is most frequently characterized by its terseness.

2. Ideas are frequently more complex, and there is little control over the *number of concepts* introduced on a page or within a chapter of science or mathematics. As an example, the author of a typical textbook in physical science for the high school devotes one chapter to atomic energy. Within this chapter the student is introduced to radioactivity, atomic structure, atomic weight, atomic number, nuclear equations, isotopes, nuclear fission, nuclear reactors, control of the fusion process, and others. Each one of these topics represents an important concept for the understanding of atomic energy, and the chapter on atomic energy is one of fifty chapters concerned with a general survey of physical sciences!

3. Concepts are developed on an ascending scale of difficulty. In both science and mathematics, the reader is required to draw upon his previous knowledge and experiences and to relate these to the ideas presented. Unless a careful evaluation is made of the extent of experiences and the levels of knowledge of students in a particular course, both the textbook and the instruction may be pitched above the functioning level of the students.

4. Wide reading, particularly in science, is often demanded from a variety of sources—sources in which the quality of writing and the readability may vary dramatically. Frequently the quantity of materials is inadequate for a student, a class, or a school.

5. Inter- and intra-relationships in mathematics and science are numerous and complex. Relationships must be recognized and critically examined by the reader if he is to understand what he reads. Students who are accustomed to reading for literal interpretation are frequently incapable of sensing relationships and thinking critically about what they

already know and what they are currently reading.

6. The reader is required to read critically; despite the fact that science and mathematics are regarded as "exact" sciences, the reader must judge the relevance, authenticity, and value of what he reads. Young students are capable of thinking in the same general patterns as adults, but they are frequently limited in attaining an equal degree of ability by their lack of experience and knowledge; hence, they are prone to accept as "fact" many ideas which because of recent scientific discoveries would no longer stand the test of a fact.

7. A mastery of study skills (interpreting graphs, tables and charts; using reference materials; and using a textbook efficiently) is essential for efficient reading in these content areas.

8. The vocabulary of science and mathematics is often specific to the content area. Henderson (3) quoting a personal statement of David Page has indicated that there are three kinds of language used in a mathematics classroom. The first is the language of the novice, which is characterized by imprecision and ambiguity and frequently accompanied by gestures and pointing. "You multiply across the top and you multiply across the bottom." The second language is at the other extreme: the precise language of the mathematician, and frequently of the textbook, including such words as *sets*, *numerals*, *variables*, *symbols* for relations, and *quantifiers*. The third language includes *sum*, *addend*, *multiplier*, and *mixed number*, for example. Henderson concludes that most teaching is done in terms of the third language, whether in person or through the textbook; but, because of its nature, verbalization on the part of the student would be easier in the first language.

We are concerned in the teaching of vocabulary with the functional aspects and the semantic variations of words. In both mathematics and science, many words function in a precise context; however, these same words may enjoy semantic variations in contexts which are already familiar to our students and hence are confusing in the new context of science and mathematics.

Taking Action to Aid Students

Very few secondary school teachers are adequately prepared, through their college training, to teach their students to read more efficiently for the various content areas. Heartening indeed, however, is the knowledge that some states are requiring that all teacher-credential programs include at least one course in the teaching of reading. The Great City Projects,

Higher Horizons, the Ford Foundation-supported SKIP program in San Francisco, and numerous other projects throughout the nation are attacking the problem of basic reading and study skills for high school youth. And numerous in-service programs are conducted each year for interested teachers who desire training in both remedial and developmental reading. Although the English teacher and the reading specialist in the secondary school are prepared to contribute to the teaching of reading skills, the responsibility for aiding students to read more efficiently in mathematics and science must be shared by the teachers of those subjects. Who is better prepared to anticipate the difficulties that students may have with particular subject matter than the specialist in that subject, who himself has developed skills of reading and study in order to be qualified as a teacher?

As we have stated earlier, a concerted effort has been made to upgrade the *substance* of mathematics and science courses in our schools. Watson (9) has stated:

> We shall assume that no teacher can work effectively in a subject which he does not understand. But what is meant by 'understanding?' It implies such a familiarity with the assumptions, the evidence, and the concepts in a subject that the teacher can play freely with their interrelationships and restructure the instruction in many ways. This competence requires time and experience beyond what usually is available in the first introduction to the subject. Yet, there is now great haste to 'update' science instruction, which means to utilize in schools quite recent interpretation of complex and current experimentation. Frequently this interpretation is novel to the teacher who has been out of school for some years. He is struggling to comprehend these new results and ideas. Will he then be competent to handle them flexibly in his teaching? Or is he likely to present them merely as the latest scientific dogma from the authorities?

Struggling with the interpretation of recent, complex changes in both science and mathematics, the teacher may feel that he has no time to devote to reading skills of the students. This teacher seriously needs help in discovering means of presenting content and skills simultaneously. He cannot, because of his lack of training in teaching reading skills and his added responsibilities of keeping abreast of scientific and mathematical phenomena, solve the problem alone. What, then, is the solution? Let us examine some possibilities.

1. The counseling and testing services of the school can be utilized in the identification of students who are in need of specific reading skills. Unfortunately, we have few standardized tests that measure a student's

ability to read critically for science and mathematics. Survey tests of reading measure very well the student's ability to read for literal interpretation. Maney's (5) excellent report tells us that neither survey tests of reading nor tests of general intelligence measure critical reading ability for science.

With the aid of testing specialists, teachers of mathematics and science should be able to construct informal tests of critical reading ability, using selections from the subject areas, and measuring these skills: identification of generalizations, inferring specific conclusions from facts explicitly stated, applying information to a problem, seeing the relationships of ideas in a series, judging the relevance of ideas, following directions, interpreting graphic representations, relating ideas to a sequence, and identifying the central theme. It would be unwise to attempt to construct an informal test for the measurement of all of these skills within a single test; however, a series of tests, designed to measure separate skills or combinations of skills would be invaluable if the results were used to determine the instructional needs of the students.

For those students who have scored in the lower quartile of a survey test of reading, special diagnostic testing should be provided. Such tests as the *Gilmore Oral Reading Tests* and the *Gray Oral Reading Tests* are of value in diagnosing specific weaknesses in word-recognition skills, phrasing, literal comprehension, and vocabulary.

2. With the help of the English department, students who need help in basic skills can be given training in English classes. For students in junior and senior high schools, the *Be A Better Reader Series* (8) provides excellent materials for developing skills in reading for science and mathematics.

3. One or two instructors from each subject area of science and mathematics may be encouraged to take training in the teaching of reading. These teachers, in turn, may provide in-service aid for their fellow teachers. An advantage of this attack on reading problems is that the teachers who know the specific subject matter can prepare reading exercises for their students and can teach reading skills each day in the classroom.

Teaching Reading in the Classroom

Within this section, consideration will be given to techniques of teaching reading in the science and mathematics class. Only four aspects of reading will be considered: vocabulary, comprehension, critical reading,

and rate of reading. It is assumed that any teacher, regardless of his lack of formal training in the teaching of reading, can aid students in developing increased competence in basic skills.

Vocabulary. The vocabulary of mathematics and science is often more specific, more descriptive, than vocabulary found in other content areas. Traditionally, students have been admonished to learn definitions of the words in a selection or chapter; however, the greatest difficulty in learning such specific terminology seems to lie in the inability of many students to apply a term to an exact process, a classification, or a broad concept. Many words need special attention, since they take on new meanings when they are used in science or mathematics. For instance, *product*, *rate*, *base*, *root*, *interest*, and *literal* are mathematics terms which have different connotations in other areas. Too often writers of textbooks introduce technical vocabulary under the assumption that the simpler phases of the subject have already been mastered by students. Teachers may make these same assumptions. The responsibility for introducing technical terms and relating them to processes or classifications is definitely a major task for the classroom teacher.

All scientific classifications are based on structural similarity. For example, *lepidoptera*, *hymenoptera*, *hemiptera*, and *homoptera* are terms used to describe orders of insects. Each term is descriptive of the wing (*pteron*) structure of the particular order: *lepido* (scale), *hymen* (membrane), *hemi* (half), and *homo* (same texture throughout). The student of biology, lacking the experience of examining the components of words, tends to attempt to memorize terms and examples of each. He may know that *Orthoptera* is a term which refers to the grasshopper, without realizing that *all straight-winged* insects are classified in the order *Orthoptera*. The biology teacher could help this student by taking time to explain the structural elements of biological terminology.

Considerable aid has been given to the teachers by authors of recent textbooks in both science and mathematics. It has become common practice to list new terms at the beginning or at the end of chapters or units. However, these lists of words are of little benefit to the student if they are merely assigned as word-memorization exercises. They must be related to classifications, processes, or concepts. They can be illustrated, demonstrated, and further related to similar words.

The use of prefixes, suffixes, and root forms may be one of the richest sources of word knowledge in these content areas. For instance, the Greek *mono* in biology is found in *monocotyledon;* in chemistry, we find

monomer; physics gives us *monochromatic;* and in mathematics we use the word *monomial*. The Latin equivalent, *uni*, may be *univalve* in biology; chemistry, *univalent;* physics, *units;* and in mathematics, *union*. Hence, knowledge of a single root, prefix, or suffix may lead to understanding of the meanings of hundreds of words.

There are other approaches to teaching vocabulary. Synonyms are always useful, but there is a danger of the synonym giving no more meaning than the original word. Dictionaries and glossaries list synonyms frequently; care should be taken by the teacher to determine that the appropriate synonym is selected to fit the particular context. Most scientific and mathematical terms are monosemantic; consequently, using antonyms, or opposite meanings of words, is frequently impossible. It can be demonstrated, however, that an antonym may, by telling what a word is *not*, give more meaning to a new term than a synonym which may be as obscure as the word itself. As a simple example, *cold* is clearly the opposite of *hot* and is readily understood; synonyms for *hot* are *heated, scorching, scalding, fervid, peppery*. Consider the confusion that would result from substituting one of these synonyms in this sentence: The night was *hot*.

The major difficulty in developing vocabulary for mathematics and science in the secondary school class is that so many terms must be mastered and applied at once. An introductory chapter in a recent mathematics textbook lists as new vocabulary these terms: *closure, commutative property, associative property, distributive property, multiplicative identity, multiplicative inverses, additive identity,* and *additive inverses*. Each of these terms is listed at the beginning of the chapter and the student is cautioned to know the words. They are also listed in the glossary of the textbook. However, few students will understand these terms unless they are demonstrated, discussed at length in various contexts, and *repeated frequently* in problem solving situations.

Words are the tools of all knowledge. They must be taught as deliberately and as reservedly as they were written. If an effort were to be made by all teachers of mathematics and science to improve the teaching of vocabulary, reading skills of their students would be greatly enhanced.

Comprehension Skills. Many students who read well in literature or social sciences fail to read well in science and mathematics. They apparently lack the ability to adjust their reading to the phrase and sentence patterns that they encounter in these areas. Paragraphs are written in a terse language; they are reduced to the minimum number of words necessary for communicating ideas. To read well, to interpret literally and

critically the writing of scientists and mathematicians, the student must develop habits of careful observation of details, learn to think reflectively about ideas and their relationships, and improve his skills of problem-solving.

An integral part of reading for science and mathematics is the interpretation of problems, preceded by precise, methodical reading. The student must learn that every word may be crucial to complete understanding of the problem or process. Recognizing all words, applying their specific meanings to the problems at hand, and sensing relationships among several conditions which are presented by the problem are prerequisites to actual problem-solving.

Careful questioning by the teacher may determine which students are grasping main ideas and essential details, which students are merely interpreting ideas literally and failing to think critically. Some students are incapable of seeing relationships among main ideas and need careful guidance in determining main ideas and their supporting details. Students benefit from occasional opportunities to restate main ideas in their own words and to state essential sequences of ideas. Listening and speaking become an integral part of good reading when the teacher involves the student in stating clearly and succinctly the ideas that have been encountered. Further, questions from students are important. Too often the teacher asks all of the questions and fails to recognize that many students in a class are not participating in discussions; since their questions are seldom entertained, these students feel a sense of futility that the content is beyond their grasp.

Fehr (1) has suggested six steps for improving comprehension in mathematics. The writer has adapted these steps to include both mathematics and science.

1. *Help the student adopt a problem consciousness.* A problem is not a problem simply because a teacher or a textbook suggests that it is. There must be a purpose for solving the problem, and this may be achieved by several readings and analyses. Further explorations of similar problems may be necessary. A knowledge of the contributions of scientists and mathematicians past and present may help the student develop positive attitudes towards materials and forces in the universe that will help him to live more successfully in our complex world.

2. *Develop wide experience and broad background in mathematics and science situations.* Too often at the beginning of a course we assume a level of understanding or proficiency in our students, based on normal

expectancies of the curriculum of previous grades or courses. Textbooks are limited; too frequently our secondary courses are broad surveys of mathematics, physical and life sciences. For the more able students, provisions should be made for wide reading to build background for understanding the laws, principles, or processes. The young and inexperienced scientist or mathematician lacks the ability to sense and feel relationships. Here is where the teacher functions best, in pointing out essential relationships through references to previous learning and through multiple illustrations.

3. *Activate the problem.* Aid the student in the statement of the problem in his own language. Be alert to distorted or inaccurate sequences of ideas. Use diagrams, concrete objects, blackboard illustrations to focus attention on the problem and to illustrate the practical applications of the problem to other situations.

4. *Help students ask meaningful questions.* When students have no questions, they have not read carefully. Guide them, through your own questions, to read the selection or problem again. In problem-solving there are always these questions: What are the conditions or details? What, exactly, are you asked to find? to do? What is the order in which the conditions of the problem should be used? What processes are required? What is a reasonable answer?

5. *Become sensitive to the student who is using an unsuccessful attack on the problem.* Encourage rereading, careful and critical thinking. Help the student correct his procedures.

6. *Generalize the solution to every problem* so that it may have wide application in solving new problems.

There are two particularly fine references that every teacher of mathematics and science should read for detailed suggestions for improving their teaching of reading. "Directives for Developing Reading Skills" in *The Improvement of Reading* by McCullough, Strang and Traxler (6) suggests numerous techniques for reading for the main idea, reading for details, and reading for sequence or outline. The Metropolitan School Study Council has recently revised *Five Steps to Reading Success in Science, Social Studies, and Mathematics* (2). They suggest that to read science and mathematics materials successfully, students must master certain reading skills: locating pertinent details, distinguishing between main ideas and supporting details, visualizing, following directions, and drawing inferences. Five steps of readiness, concept development, silent reading, oral or written discussion, and oral or silent rereading are out-

lined in detail and illustrated for the teacher.

In both areas of mathematics and science we have moved away from the format of model solutions of problems, followed by a series of similar problems or experiments to be completed by the student. Today, fewer examples are given and the student is required to supply reasons for steps, later the steps, and finally the entire proofs. This change in emphasis has handicapped the poor reader; under the traditional system of models, the poor reader could frequently work a series of similar problems in physics, chemistry, or mathematics with a minimum of reading and memorization of the model.

Nordberg, Bradfield and Odell (7) recommended open-end experiments as one means of meeting individual differences of experience and abilities. In contrast to verifying conclusions known beforehand, the student must determine the methods to employ, the apparatus to use, and the conclusions to reach. Open-endedness of the experiment is varied according to the abilities and experiences of the students. Frequently, the student who cannot read the experiment can participate successfully in the discussions of methods, apparatus, and conclusions and can complete the experiment independently.

Critical Reading. It has been stated earlier that many students are capable of literal interpretation of what they read in science and mathematics, using only the information which is explicitly stated. A question such as "What is radioactivity?" can be answered on the basis of explicitly stated facts; however, to answer the question "What uses can we make of atomic energy?" the student must go beyond the printed page and think critically, using the specific knowledge that he has about atomic energy and inferring or predicting logical future uses. He may consider the present use of isotopes in medicine and predict probable developments. He may consider the possibility of conversion of sea water into fresh water.

There are innumerable definitions of critical reading and critical thinking. What, from our knowledge of critical reading, is practical for the teacher who wishes to aid his students in developing better understanding of the concepts of science and mathematics? Maney's (5) definition of comprehension and critical reading skills, derived from her study of literal and critical reading in science, has definite implications for both science and mathematics.

1. Developing functional vocabulary, or the vocabulary which is necessary for the understanding of the subject.

2. Developing understanding of the semantic variations of vocabulary,

or the use of words in other contexts.

3. Locating the central theme; separating the central topic from the subordinate topics.

4. Making inferences; drawing conclusions from facts explicitly stated.

5. Making generalizations; identifying a general conclusion or principle from information implicitly stated.

6. Solving problems; applying information to problem situations.

7. Associating ideas; relating ideas in a series.

8. Recognizing analogies; seeing relationships between two pairs of ideas.

9. Understanding antecedents.

10. Establishing and remembering sequences.

11. Recognizing extraneous ideas.

12. Following directions.

13. Visualizing; interpreting graphic representations of an idea presented verbally.

Rate of Reading. Many of our students in secondary schools have been made aware of the necessity for reading rapidly. Numerous articles in newspapers and magazines, demonstrations on television channels, and purveyors of books and programmed materials have made the student conscious of the need for acclerating his reading as he has accelerated his other activities. The amount of reading to be done in a day's assignment is increasing with each generation; the availability of a wide variety of supplementary materials for each content area has emphasized the need for selecting wisely, skimming, and reading intensively.

The student who reads science and mathematics must be prepared to make adjustments to the basic materials, both in terms of his speed of reading and his purpose for reading the material. Reading in these content areas is most frequently slow, deliberate reading. By its very nature, problem-solving is more deliberate than reading for pleasure. Skimming is seldom applicable as a skill, except to familiarize the student with new materials or to search for related ideas. Directions must be read and reread, with attention directed toward the exact use of words, the sequence of ideas, and the questions that are raised. Fortunately, many of the concepts of science and mathematics are both observable and demonstrable; many of the ideas are precise and if careful reading has been done they may be related to known laws and principles.

The teacher of science and mathematics may occasionally advise the reader to slow down and to read deliberately and critically. If essential

words, phrases, or symbols are missed in cursory reading, then rereading is necessary.

Using Diversified Materials and Activities

All classroom teachers are certainly aware that our textbooks are not appropriate for all of the students in a class. Problems in real life are frequently not structured like those in the text, and the necessary data for an experiment or a problem are not always obvious to the poor reader. Many textbooks present too many topics in such concentrated space that the reader cannot clearly understand the essential relationships. Frequently, summary statements at the beginning or end of chapters presuppose experiences and knowledge that students do not possess. The problem of the textbook is compounded at higher levels of education, particularly in junior and senior high schools, where the use of a *single* text is prevalent in science and mathematics classes, and where the range of reading abilities of the students may be from a third reader level to the level of a mature adult.

The unit or project plan of teaching makes possible the diversity of materials, both in terms of interests and reading abilities of the students. A textbook is less essential when a broad unit is developed and students are assigned topics in materials which are commensurate with their reading and thinking abilities. However, in mathematics we are constantly confronted by a single textbook and virtually no supplementary reading materials for the poor reader. As a result, the teacher must diversify the activities in terms of the abilities of the students. Oral reading of problems, discussions and demonstrations of problems, and numerous teaching aids are necessary to involve all students in solving the problem. Recent developments in materials for the teaching of science and mathematics have included the use of multi-sensory approaches to reading and learning: films, filmstrips, models, and a wide variety of concrete objects.

In the selection of supplementary materials for the science or mathematics program, the librarian is invaluable. Lists such as Mallinson's (4) are readily available in most libraries and offer guidance in the selection materials for slow learners and retarded readers. We should be concerned, when we select materials, that they are of a length substantial enough to constitute a valid reading situation. They should demand the same competencies of the student as are demanded in reading textbooks. The quantity of materials is not nearly so important as the quality and the usefulness.

Summary

An increased emphasis upon the substance of courses in mathematics and science has not in any sense alleviated the problem of poor readers in those content areas. Mathematics and science teachers, who know the substance of their courses, are in the best position to aid their students in developing better reading and study skills for their particular courses. While their general reading skills are frequently well developed, students may lack the experiences for adapting their reading skills to science and mathematics. Teachers and students in science and mathematics courses are involved in two vital processes: the development of *knowledge* of specific content, and the development of *skills* for life-long acquisition of knowledge.

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Discussion

Dr. Shafer: In 1940, I believe, Professor William S. Gray posed a question about reading: "Is reading a single general ability which transfers to the content fields, or does it consist of a number of specific abilities which are unique to the various disciplines?" He indicated that he hoped further research would provide us with an answer to this question. I would like to ask my colleagues on the panel, and particularly Professor Robinson, if, in her view, research has provided an answer. It seems like a very good question if we are to concern ourselves with new developments in textbooks and text materials.

Sr. Julitta: First of all, the matter of vocabulary, which was ably handled, is the work of the subject field teacher, as no one else could have as good an understanding of these concepts.

Then, very important is the thinking that is involved in the subject field; and as Dr. Bamman pointed out, we are so apt to think of specific techniques or skills that we forget that underlying those techniques is the development of specific types of thinking.

Dr. Robinson: I'll go back to the question first, if I may. There have been a number of studies dealing with this matter of whether reading is something that involves a number of distinct skills and abilities, or not.

The answers have varied markedly. The more mature and competent the reader, the fewer the number seemed to come out of this analysis. The less mature and competent the reader, the greater the number seemed to come out of this analysis. Not all of these would be applicable to mathematics, or science, or literature or anything else.

When we start to drive a car, we are conscious of the various steps. Once we've become competent drivers, however, we don't pay attention to them because all of them are used at the same time or fairly evenly. If this is the case in reading, then mature readers have this combination of competence and ability; so the different skills cannot be easily separated out.

I'd like to go back to the Bamman paper for just one minute. I'd like to comment on critical reading and the various definitions given. I'm wondering if we adopt these definitions, if it isn't going to confuse us; because many teachers will say, "Well, I teach getting the main idea, so I teach critical reading." I ask if this is critical reading. Is problem-solving critical reading? What is critical reading? I think we have to be a little more precise and not lump everything into a new area like critical and creative reading. We talk about them loosely.

I'd like to propose a definition of critical reading which does not include some of these points. I suggest we think of critical reading as judging the veracity, the validity or worth, of what is read based on some criteria or standards developed through previous experience.

Harold L. Herber

Jamesville DeWitt Demonstration Center
Syracuse University

6. Teaching Secondary School Students to Read History

CONSIDER the typical history teacher: a total student load of 150 to 170 students; a curriculum which, chronologically, covers centuries or, topically, ranges over broad areas of human interest, ideas, and endeavor; an administrative assignment such as study hall or cafeteria duty; sponsorship of at least one extra curricular activity; service on a curriculum or professional welfare committee; enrollment in a course for professional improvement; normal home responsibilities. Stop him in the hall and ask him what he is doing to help his students improve their reading of history and watch his reaction. Accompanied by signs of restrained emotion and considerable frustration will come the two-word reply: "When? How?"

Most history teachers are well aware of the reading load necessary for the subject. They are aware that too many of their students do not read well, adequately, passably, or at all. They know that something must be done to help these students. But when the answer is "Every teacher is a teacher of reading" with neither qualification nor explanation, it is ignored as a meaningless cliché or impracticable theory.

The purpose of this paper is to provide context for the cliché, practicality to the theory, answers to the teacher's harried questions: "When? How?," and proposals for success in teaching students how to read history.

Problems Impeding Success

By the very passage of time, history content increases rapidly. Teachers are staggered at the amount of knowledge to which their students should be exposed. Loving history and possessing scholarly sensitivity to the importance of hundreds of details, the history teacher finds it difficult to make selections for his course. Specialized vocabulary saturates the content

necessitating prior exposure before students encounter the textbook (7). The fact, concept, and vocabulary load of available texts often exceeds the reading achievement level of the students, as shown by Arnsdorf: "In general, reported findings indicate that the reading level of most social studies books is higher than the average reading ability of the children in the grades for which the books were intended." (1) Often the teacher must follow a curriculum guide which, though dedicated to excellent objectives, outlines an excessive burden of facts, learning activities, and sequential experiences (8). Thus the history teacher faces a curriculum formidable both in quantity and quality.

History teachers themselves may impede their students' successful experience in reading history. Their thorough knowledge of the subject may trap them into assuming that students know more than they really do, leading them to present concepts without proper foundation. Also, "Many teachers think less in terms of reading the course objectives than in 'covering' the specified ground." (8) "Unfortunately, the content area . . . is often too broad to be covered adequately. The urgency of time will tempt the teacher to provide too many ready-made explanations without allowing the student to develop his ability in independently gaining insight into concepts." (7) Both the fact that teachers tend to teach the way they themselves were taught rather than the way they were taught to teach, and the fact that most history teachers have had little or no training in techniques for improving their students' ability to read history, lead to conclusions similar to Nowell's: "Teachers continue to present traditional courses, painfully and at times embarrassingly aware of the outmoded character of such courses." (7)

On the other hand, students present the teacher with a frustrating variety of background, experience, understanding, ability, and achievement. The teaching difficulty is apparent when one realizes that a solid ". . . background of knowledge, based on facts and experiences, is obviously necessary for good reading. . . ." (2) This requires that the teacher raise the level of this background. Difficulty also is to be expected since there are ". . . unjustifiably large numbers of poor readers in our schools." (11) Some students lack the basic mechanics of reading. Others can read, but with little understanding. They fail to note trends, to sense relationships, or to make associations. They find it difficult or impossible to react critically to what they read, to interpret its meaning, to evaluate its worth, to discern its intent, to grasp the new ideas, or apply them if they do. It seems futile to expect such students to read both the quantity

and quality essential to an adequate understanding of history. Many despairing history teachers have come to depend on the lecture for dispensing the content of their curriculum.

Provisions for Success

The situation is not hopeless; the condition of both the history teacher and student can be improved. But this improvement requires close assessment and modification of 1) attitudes, 2) methods, 3) materials, 4) provisions.

Consider, again, our typical history teacher. He recognizes that his students do not understand the basic vocabulary of the subject; do not possess adequate reading and study skills; and frequently possess only isolated, unrelated facts after studying a given unit. This teacher postpones the inevitable and prolongs his frustration if he fails to accept responsibility for teaching skills needed to study history. If students assimilate little content and acquire few skills, the teacher has failed even if he does "cover" the curriculum. It is possible for the teacher to insure against such failure.

A change of attitude and perspective by the teacher, the supervisor, and the administrator often is the first step toward a solution. To blame elementary schools for poor preparation of students is no solution. The elementary school is not responsible to teach students how to read tenth grade world history; it is responsible only to give basic preparation so that the world history teacher can build on this preparation: teaching the vocabulary basic to the subject; providing guidance in reading critically, in seeing relationships, in awareness of organization, in sifting fact from opinion, in grasping the main idea.

When he satisfies himself that ". . . careful attention to the basic skills for good comprehension of history . . . should be an integral part of the teaching" (2) and that this attention and teaching are his responsibility, the history teacher must find the means for making this possible.

The teacher must learn to look at the course content, not in terms of what he enjoys and has come to appreciate over years of close study, but rather in terms of what his students need and can assimilate at that grade level. As Bamman says, "The teacher must use good judgment in selecting only those details which will actually aid the student in developing clear concepts. . . ." (2) The pace at which the concepts are presented may need adjusting:

Teachers should introduce their students to new facts and ideas at a pace

> which is consistent with their ability to assimilate them . . . a student is actually handicapped by trying to, or by having to try to, cram more information into his head than he can possibly hold. (8)

The materials to be used must be carefully examined since:

> It is up to the teacher to adapt a textbook to local circumstances—to determine which portions of it the students are to master, which portions they are to skim, and which portions can be omitted without violence to the fundamental structure of the subject. (8)

Supervisors and administrators must support the teacher in this selectivity. If the teacher feels he must be selective surreptitiously and only at the risk of being chided by his superior for failing to "cover" the curriculum, then he is likely to follow the expedient course.

Reappraisal of what should be taught and, as shall be seen, of how it should be taught, demands flexibility, creativity, and courage. The teacher must be willing to try new ideas, to discard, adopt, adapt, and constantly evaluate. Creativity goes hand in hand with such flexibility.

> No matter how much we learn from research, the individual teacher's way of teaching must be his own unique invention. He must arrive at this personal invention through his own creative processes in trying to accomplish his teaching goals. As he fails or succeeds in reaching these goals, he becomes aware of his deficiencies, defects in his techniques and strategies, and gaps in his knowledge. He draws upon his past experiences. He increases his search for clues in his ongoing experiences. He tries to apply creatively the scientifically developed principles he has learned in his professional education and reading. He sees things of which he has hitherto been unaware. He starts making some hypotheses, testing, and modifying them. Through the pain and pleasure which accompany this process, the teacher's personal invention—his way of teaching—evolves. (10)

And, of course, such flexibility and creativity take courage—particularly if one's fellow teachers and supervisors are not sympathetic.

> It must be remembered that every new idea in the beginning always makes its originator a minority of one. It is well known from research that being a minority of one is tremendously uncomfortable and more than most people can tolerate. Thus, creativity takes great courage. (10)

Not only must the attitudes of teachers, supervisors, and administrators be appraised, but also—as has been suggested—teaching methods must be modified. Principles of elementary school teaching must be applied to secondary school practices. When this is done, students will

acquire the skills to read and study the required material simultaneously with an understanding of the subject.

It is characteristic of elementary school teaching that students receive careful preparation for each reading lesson. This preparation includes close study of vocabulary to be encountered in the reading, motivation to arouse interest, review of previously learned concepts to provide a frame of reference for the new understandings to be acquired, creation of a sense of anticipation to cause the reader to seek ideas actively rather than passively, and most importantly, specific directions as to *how* the material is to be read. In contrast, too often the history teacher's preparation of his students for reading is only: "For tomorrow, read Chapter 16." To be sure, there are those who do discuss vocabulary to be encountered, who highly motivate their students, and who provide the frame of reference. But rarely does one find the teacher who gives his students specific directions as to how they are to read the assigned chapter. Rather, the teacher assumes that students should know how to read a chapter in a history textbook by that point in their educational experience. And the students are left on their own to apply any combination of the dozens of skills needed to read critically, to read with a sense of organization, to read for elaboration upon the new ideas and associate them with previous information and experience.

Obviously the history teacher must prepare his students for the reading they have to do. Then he must guide them through the reading experience so they will read for the purposes he has established and apply the skills that he has identified. The teacher must not concern himself with prepared lists of skills needed to read history. Teaching through these lists is not his responsibility. His job is to make certain his students develop a working knowledge of history. Therefore, rather than using a skills list as the basis for his teaching, he takes his materials to the list to find those specific skills needed to read a particular passage with proper understanding.

It is at this point that the line is drawn between the reading teacher and the history teacher; and it is for this reason that Preston says, "The slogan 'Every teacher a teacher of reading' while true in a sense, is misleading." (8) The reading teacher's emphasis is upon skills and he seeks materials as vehicles to develop the skills. The history teacher's emphasis is upon concepts and he examines his material to discover what skills are needed to insure reading with understanding. These are the skills he directs his students to use. It is this latter process that makes

possible the simultaneous development of skills and understandings.

After he identifies the skills and directs his students in their application, the teacher will need to supply them with study guides. These should guide students in reading for the purposes the teacher has outlined and applying the skills he has identified. Though a more laborious process in the beginning stages, the returns are more than gratifying when the teacher soon can say: "Do you remember how we read the section on the effects of the Civil War on southern economy and the skills we applied to the reading? This new material must be read in the same manner and the same skills applied." Thus guided transfer of training is possible. Examples of such study guides are discussed below and sources for securing samples are listed.

There is yet another page to be taken from the elementary teacher's book of teaching practices: grouping within the class. With facility and ease, elementary teachers group their students for instruction and often vary the groups—depending upon the subject or area being considered. Suddenly, however, when students enter secondary school, they are grouped only into classes, rarely within classes. And there are good reasons for this. One teacher might feel that if students are in small groups, he will have discipline problems. Another might feel that if the principal walks by and hears the inevitable talking (purposeful though it may be) he will question the teacher's ability to control the class. Still another teacher might feel unless he is in front of the room talking, he is not really teaching.

Intra-class grouping is a natural partner to the study guides mentioned above, allowing the teacher to serve better the individual differences of his students. It also provides opportunity for what Durrell calls "multiple recitation" (3), each student having more frequent opportunity to participate in discussions and projects in a small group than he has in the full class. The 60-, 50-, or even 40-minute period does not militate against grouping in the history class when it is obviously profitable to do so. When students become acquainted with the procedures, they can be grouped quickly and efficiently; the teacher is free to work with groups or individuals; and when the class is brought together again, students can contribute significantly to the total class discussion and can learn from one another. The teacher can emphasize points of importance and tie together any loose ends.

The "how" in "How can I help my students?" is answered when one applies methods discussed above to materials designed for such purposes. For example, consider the problem of vocabulary load in history textbooks.

"Helping students enrich their vocabularies is one of the important contributions the teacher can make to the improvement of the ability of students to read social studies material." (8) The help does not come by giving students lists of words to define and memorize.

> A memorized definition without understanding is worse than no definition at all, for the student may feel that he has an acceptable answer without realizing that he has no foundation on which to build. Explanations of concepts developed by the students and put in their own language are the explanations they remember. (7)

The solution comes in two forms. First, ". . . in the direct teaching of new and specialized terms . . . (which has as its purpose) . . . not only to have the students acquire the meaning of specific words, but to have them acquire the skills whereby they can get the meaning of unfamiliar words without having to resort to a dictionary." (8) Durrell refers to this as "word power" saying that, "Success . . . (in meeting) many thousands of new words in his required and free reading . . . requires many transfer abilities which give the child general *word power* . . . (This task) cannot be met by separate teaching of every new word." (8) Therefore, by careful selection of words to be taught directly before assigned reading, teachers can show students how to analyze other new words for meaning as they are encountered.

The second part of the solution for helping students enrich their history vocabularies is in the provision of vocabulary practice material. Such material insures multiple exposure to words in controlled situations, requiring manipulation of the words in various contexts. A simple crossword puzzle using basic words of a given unit provides such practice. Or one might make a "categorizing" exercise which requires students to place each of 15 or 20 basic words into three general categories related to the unit. Or one might set up a simple matching exercise, or multiple-choice, or completion. In all cases, the practice materials require the student to use the words, to consider their meanings, to reflect on their usage, to weigh connotation and denotation. The exercises may be used as homework, for classwork, and as the basis of discussion; and since vocabulary basic to an understanding of a given unit is being used, the student develops not only word power, but also a good understanding of the basic concepts of the unit. Scholastic Book Services publishes a new vocabulary book which is a good source of ideas for such exercise material. (5)

As discussed above, the history teacher identifies the skills needed to read with understanding and prepares study guides designed to be used by students during their reading. He prepares them in such a manner that one guide can be used by several groups at various levels of ability and achievement. For example, the skill may be "recognition of author's assumptions." Faced with a range of achievement levels in his class, the teacher prepares his work sheet so that questions are graduated in difficulty, yet deal with the same concept and require the same skill. As students read the text, they are guided in looking for the author's assumptions. The slower students are aided by being able to select answers from possible choices; the more able students, needing less direction, are guided only by probing questions on the work sheet. However, when the groups contribute to total class discussion, the slower students feel they have as much to offer as do the more able. Both groups will have practiced needed skills and, simultaneously, acquired the necessary understanding.

"Evidence is ample . . . that . . . social studies students can be helped to achieve more if instruction includes giving attention to the reading and study skills used." (4) This attention includes guiding students while they use specific skills. Such attention is profitable since it ". . . results in the improvement of both reading skills and knowledge of subject matter." (8)

Several provisions are essential to the success of an instructional program such as that outlined in this paper. Teachers need help from persons especially trained in identifying skills required for successful handling of specific reading matter, who are skilled in preparing guides designed to aid students in reading for specific purposes, who are able to demonstrate the grouping of students for instruction within a class and who consider learning subject content the primary task and developing reading skills the means to that end, not as the end. This is supported by Preston when he says, "Reading specialists are needed in high schools not only to undertake the instruction of retarded readers, but also to assist teachers of all academic subjects in developing materials and methods for guiding their students in reading and study." (8)

Since many history teachers are unfamiliar with teaching procedures used in teaching their subject in the manner suggested above, school systems must establish a program of in-service training. This is an invaluable aid to teachers' success in meeting their students' needs. It would also provide opportunity for them to prepare vocabulary practice and study guide materials needed in such an improvement program.

Supervisors and administrators must realize that the preparation of materials is a time-consuming task. They must work to provide time, preferably summer workshops, for teachers to write the materials they will need. These materials must be made available in quantity for classroom use so that teachers will not have to spend time typing and duplicating materials during the school year. Storage space for materials will be needed, with teachers able to order copies as they need them.

In the same manner that teachers should create a good environment for students, conducive to learning, supervisors and administrators should create a good environment for teachers, conducive to teaching. Neither environment is necessarily physical. Understanding and support provide a unique and essential environment. In addition to provide the consultant help of the reading specialist. The in-service training for the teachers, and the availability of materials, supervisors and administrators should encourage valid variations in methodology and relieve any "curriculum-coverage" pressures on teachers. These elements of a good teaching environment became major contributions toward teaching students to read history material well.

Example of Success

In a large high school district a program was established which included the provisions mentioned above and which was based on the approach espoused in this article (6). The program was started in seventh grade in the study of New York State history.The second year it was extended to include seventh grade science. All 2,000 students were involved in the program, with all seventh grade history and science teachers participating.

An in-service course was organized for the teachers in the program, providing instruction in how to use the new materials, how to group for instruction, how to prepare students for the reading they must do, how to use test data to analyze students' needs, how to prepare additional material if needed. Summer workshops were organized for teachers to write materials needed for the program. Through the Instructional Materials Center, all materials produced were available to teachers in quantity. The reading specialist in each building was available to assist classroom teachers in the program.

The 1959-60 seventh grade was used as the control or base point, since it did not participate in the program. The 1960-61 seventh grade program encompassed history. The 1961-62 seventh grade program encompassed both history and science.

The Iowa Silent Reading Test and the New York State Survey Tests for both Science and Social Studies were used as standardized measures of achievement. Pre- and post-test data were available for all three years on the Iowa Test. It was available on both survey tests only for the 1959-60 and 1961-62 groups.

For all groups and on all measures, pre-to-post-tests gains were significant at the 95 per cent level or higher. Regression analysis was applied to determine if there was significant growth in the pre-to-post-test gain among the three groups on the three measures. The 95 per cent point was established as the acceptable level of significance.

When the program was offered only in history, there was no significant growth in reading achievement over the group without the program. However, when the program encompassed both history and science, there was significant growth in reading achievement.

Increased achievement in social studies content was not significant (66 per cent) but was indicative of some trend. Growth in achievement in science content was not significant (40 per cent). The difference in achievement on science and social studies measures, coupled with subjective observations of the operation of the program, led to the conclusion that gain in achievement was due more to the fact that the history teachers had two years' experience in the program than the fact that students participated in the program in two subject areas.

Teacher evaluation, student evaluation, and trends indicated by objective testing indicated that the program—including its services—brought about the desired results: the improvement of students' reading of history and a greater understanding of subject content.

Sample materials used in the program are available (6).

Another program, similar in nature, is being established as a Demonstration Center under the Project English program of the United States Office of Education. Sponsored by Syracuse University, it is located at the Jamesville-DeWitt Junior Senior High School, DeWitt, New York. Ten films of the program will be available for rental at the end of the three-year project. Observation of the program will be possible for those who are able to visit the school. The program will offer services and make provisions advocated in this article.

Comments on Success

History teachers are responsible for teaching their students how to read history material well. They need not sacrifice the teaching of the subject

content to do this since both skills and concepts can be developed simultaneously. Such teaching is possible when techniques commonly used at the elementary level are applied to the secondary: vocabulary study before reading; identification of purpose for reading and the skills to be used; guidance in applying the skills; assistance in reacting to and the use of ideas gained from the reading; organization of students into different grouping patterns according to instructional purposes.

Teachers must be freed from pressures to "cover" the curriculum. They must be given training in the new techniques to be used. They must have time to prepare essential materials. They must have the courage to try new approaches.

There is both significant and indicative evidence to show that history teachers can meet their responsibility with respect to teaching both skills and content—and do so without sacrificing either. There is no way to escape poor readers of history other than to train them out of that condition.

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Discussion

Sr. Julitta: Dr. Herber has presented the material in a very thorough manner and has given specific suggestions on how we can implement our history program and take care of individual reading needs.

I would like to re-emphasize some of his points. I believe the in-service program could be conducted as demonstration lessons throughout the year. These demonstration lessons could be via TV by an expert teacher, or by films, as you mentioned.

Now, more consideration, I think, should be given to the summer workshop idea. Can we engage teachers to prepare the materials, to work out the curriculum in detail? I think teachers would get an education in doing this; and also, it would help the teacher because the load is too heavy during the school year for curriculum building.

As far as vocabulary is concerned, I believe there is much more danger that the history teacher will neglect teaching vocabulary than that the science and math teachers will, because their terms are obvious. In history, we very often overlook the vocabulary load that the students encounter, especially the general vocabulary which may have different connotations in history than in other subjects.

Dr. Robinson: I should like to ask one question, and that is: on what basis does the history teacher choose to group? Is it on the basis of reading ability or some other kinds of abilities? perhaps our speaker might have an opportunity to make a few comments on this point.

I think that the emphasis upon the directions for reading and upon practice is excellent. I should like to point out that we need perhaps one other dimension, and that is a kind of diagnostic procedure whereby the teacher not only provides the direction and the practice, but also helps to find out where pupils go astray and shows them how to do a better job.

Continuing to practice mistakes is a common procedure not only at the high school level, but in many instances in elementary school where neither time nor know-how is available to the teacher to find out what the difficulty might be.

I'm also particularly pleased that the speaker mentioned the importance of critical reading. This is an area that we must never overlook, because we are,

indeed, preparing these young people to use social studies materials as a background for intelligent participation in life. Blind faith in the text has too often been the procedure in the social studies, and students may develop blind faith in whatever they read later.

DR. SHAFER: I was also very much interested in the case study of a school system which has made successful progress in attacking the problem of improving reading in history. I think that it's necessary to mention here, of course, that the teaching of history is not limited to the social studies teacher alone, for the teacher of English teaches literary history and the science teacher teaches the history of science, and so forth.

In the paper yesterday and in this one today, we have been reminded that textbook materials are not really adequate in helping young people to understand the concepts in these various fields.

I wonder if Dr. Herber would comment on two things; number one, the materials which were produced by the teachers working in the summer—can these be produced commercially, and perhaps more economically, and marketed commercially?

Secondly, as a supervisor, what were some of the biggest obstacles which you found in proceeding with this project? Was it the matter of taking practices from the elementary school, such as grouping, into the secondary school? I think this would mean a fundamental change in the instructional procedures of many secondary teachers; and I'm wondering just how you managed to convince the many secondary teachers that these were good things to do.

DR. HERBER: Mostly by persuasion and intrigue of all sorts. For example, I taught a class in which students worked in groups, and had the teacher walk up and down the hall and listen for noise. Teachers are very sensitive to this.

It's really a traumatic experience for secondary teachers to put students into groups. For some reason they feel that unless they're up there talking, they're not earning their money; if they aren't talking, there's no learning. It's hard to convince them that many times they stand in the way of good learning by standing up there talking.

I was particularly fortunate to have a young teacher who was full of ideas, secure enough to try something new, and if it failed, evaluate it and try a different way. She was particularly successful in having as many as seven groups going on at one time. So we had teachers come in to watch this, and they saw that there wasn't chaos and that the students were not crawling up to the walls, but were really engaged in a purposeful activity; and so they would try it.

We were fortunate in having a reading specialist in each of the buildings. When I went to the district, they were primarily remedial teachers. We changed their role to that of consultant so that eighty per cent of their time was spent working with classroom teachers; they would give demonstrations and show teachers how to group within a class.

With some teachers we never did succeed. I recall one who would never put her students into groups. She always had nice, neat rows. However, she did permit her students to work in pairs, because they could look across the aisle and work together.

The biggest obstacle standing in the way of this program, I think, was probably grouping. This seems to really be very difficult for a secondary school teacher. I also found that it's a traumatic experience for a social studies teacher to skip a chapter in a textbook. There's something really sacred about this text and everything must be used. You cannot even skip a section in a given chapter. It is very difficult to convince teachers that students will not suffer forever if they miss a section.

For the slower groups all this material is not essential. Teachers should pick out the essential elements and guide the students. With the slow groups, we would give them the page, the column, and the paragraph they were to read . . . Dr. Shafer asked whether the materials we produced could be made available commercially. I assume you are not asking for these particular materials, but anything like this. I think it could be done, although so many times a specific school district and a specific teacher have unique requirements. I have a feeling that it would be difficult to make this material commercially available.

Another question was asked with reference to the basis for grouping. Many times this grouping process was very subjective. I think it could have been tightened up considerably. We used test scores and made out "scattergrams" for each teacher so that he could see the relative achievements of students within a class; this sometimes was used as a basis for grouping. Many times, particularly after the teacher became involved in grouping, she was able subjectively to determine how she would put her students together in groups, depending upon the purpose of the given activity. Other times we would use different materials for grouping for different purposes.

Dr. Robinson: May I say that I thoroughly approve the idea of groups being loose enough to fit the needs and flexible enough so that children can be grouped and regrouped. I merely wondered if this were being done at the high school level.

Dwight L. Burton

Florida State University

7. Teaching Students to Read Literature

SOME definitions and limitations seem necessary as a prelude to any discussion of teaching students in the secondary school to read literature. First, like Wellek and Warren (14), I arbitrarily define literature as those genres which have reference to a world of imagination, of fiction. Excluded from this discussion, then, are such forms as biography, essay, sermon, letter, and speech, though these have a place in the reading program of a school.

Learning to read literature is a part of the global area of learning to read, to deal with printed symbols. This discussion is concerned with the direct efforts teachers may make to increase the student's power to deal with imaginative literature. Teaching of literature in the secondary school takes place in a total context of school and life and between two arbitrary points on a continuum in one type of human development. What has happened to students in the elementary school and in life, obviously, and what happens to them in any contexts outside of the literature class have definite bearing on the teacher's efforts to increase their power in reading literature.

One condition basic to any effective effort to give direct instruction in the reading of literature is that students must previously have experienced enjoyment with imaginative literature. Early (1) has identified three stages in the development of appreciation of literature: 1. Unconscious enjoyment; 2. Self-conscious appreciation in which the student seeks to learn why selections of literature affect him in certain ways; 3. Conscious delight in which the reader responds with delight in the literary experience, knows why, and reads with range and power. Obviously, this discussion must be concerned mainly with the crucial stage 2 in Early's analysis. It is equally obvious that most students, by the time they enter junior high school, should have experienced unconscious enjoyment of imaginative

literature of some type. Such experiences, which we hope will continue no matter how much study of literature the student carries on, are necessary readiness for the efforts of the secondary school teacher of literature.

The student's ability to profit from direct instruction in the reading of literature depends, further, on the attitudes he develops in approaching literature and on his freedom from characteristics associated with immature or unsatisfying responses to literature. Squire (12), in his doctoral research, identified five characteristics of adolescents who respond perceptively to imaginative literature:

1. They react with genuineness; they do not substitute the standards or judgments of others—the teacher, critic, or other students—for their own.
2. They suspend judgment until they have tested tentative interpretations.
3. They are willing to search for meanings.
4. They weigh evidence, judge details objectively, and maintain esthetic distance.
5. They fuse emotional and intellectual responses; they are able to respond emotionally at the same time that they are concerned with the way in which literary artists achieve their effects.

Squire's findings corroborate the much earlier ones of I. A. Richards (9), who suggests certain factors which impede the literary experience:

1. Failure to make out the plain sense of the selection.
2. Misleading interpretations caused by a personal experience.
3. Dependence upon or use of stock responses ("it was very true to life," for example, or "the style was masterful") which may or may not indicate any real feeling about a selection.
4. Sentimentality—the student cannot accept that unhappy ending, for example.
5. Inhibitions or hardness of heart—the student simply may lack sensitivity to human suffering, for example.
6. "Doctrinal adhesions"—that is, the student is unable to overcome the preconceived ideas and attitudes he brings to his reading. The racist, for instance, may be blind to everything in a novel which incidentally reveals some sympathy for maltreated Negroes.

The interaction of a human personality and a selection of literature will always produce some imponderables, but it seems clear that mere exercises in analysis of the various genres of literature are not sufficient in teaching students to read literature. Such activity must take place in the context of the *structure* of imaginative literature, and each teacher must develop to

his own satisfaction some analysis of that structure, else he will not know really what literature is, and he thus cannot know, in given instances, whether he is teaching literature or something else in which literature may be an accomplice, incidental or otherwise. The teacher, for example, who asks students to seek morals in short stories may be teaching ethics, Puritan precepts, or something else, but he may not be teaching literature unless identification of a "moral" coincides with an approach to the story as genre.

A committee of teachers in Toronto (3) concluded that the basic principles of structure in literature are to be found in the "different forms and the recurrent themes." Proceeding from this premise, I suggest a four-layer description of the structure of literature:

Layer 1—Themes which develop from four basic relationships: Man and deity; man and other men; man and nature; man and himself.

Layer 2—Modes, of which there are four basic ones, according to Frye (2) —romantic, comic, tragic, and ironic. Romantic and comic modes, Frye maintains, are the easier, tragic and ironic the more difficult.

Layer 3—Genres, of which the modern imaginative ones are novel, short story, poem, and play.

Layer 4—The individual selection.

Learning to read literature implies an awareness of these layers of structure. All teaching of the skills of reading literature takes place in this general context.

If the major purpose of teaching students to read literature is to enable them to gain "felt" knowledge—and I think it is—and if the training which leads to this ability involves enjoyment—and I think it does—then the relationship of enjoyment or appreciation, on the one hand, and study or analysis, on the other, becomes a dilemma of the chicken-or-egg variety.

This brings us, then, to the actual hierarchy of skills with which we will be concerned in teaching students to read literature. It seems to me that three sets of abilities comprise this hierarchy:

1. Abilities needed for imaginative entry into a work of literature.
2. Abilities needed for perception of meaning or central purpose.
3. Abilities needed for perception of artistic unity and significance.

All of these three sets of abilities involve both intellectual and emotional reactions on the part of the reader, for literature "engages . . . the whole man in his response—senses, imagination, emotion, intellect; . . . "(6)

Imaginative Entry

Imaginative entry or empathy is the first essential, otherwise the reader is barred from an esthetic experience; he is not *reading* literature. Unless he can enter imaginatively into the work, he cannot determine for himself the meaning or purpose, though he may take someone else's word for it. And if he has not experienced literature deeply enough to perceive its meaning or purpose, he has no business judging its artistic unity or significance. It is our common failing that we demand judgment of literature by students before they know what the literary experience is, and we have the sterile tradition of periods in which students criticise the plot, the style, the imagery, the characterization before they know how any of these relate to meaning or central effect.

We know, of course, that some students are more imaginative than others, more ready to suspend disbelief, more "fantastical" as Banquo said. But regardless of quickness of imagination or inherent flair for the non-literal, all students are capable of imaginative entry into vicarious experience merely because they *are* human and because they have had many experiences. The problem is to relate the experience recreated in the work to their own experience, and the answer, I think, lies in the identification of correlative experience. Just as the literary artist expresses emotion indirectly through his work, so the reader must call up experiences in the *general* field of emotion represented, for it is only occasionally that the reader's actual experience closely matches that reproduced in the work. Our student has not traveled down the Mississippi on a raft with a runaway slave and tussled with his conscience over knowledge of law versus feeling of personal loyalty, but he has been in some situation which involved a conflict between his relations with an individual and his relations with society or a group. He has not spent a day or night upon the ocean fighting and finally subduing a giant marlin, vainly fighting off sharks, bringing to shore, in complete exhaustion, only a great skeleton, but he *has* realized the hollowness of a victory or he has carried on a lonely struggle to achieve and perhaps no one has understood.

The student must learn to use his experience, to examine it constantly for its relevance to the work of literature. This is not easy for, by and large, in his early years he has read in the escape tradition. Reading of literature, from the fairy tales forward, has represented escape from his experience. In general, he has learned to approach literature as something divorced from his own life, and therein lies its appeal. His experience with

television further fortifies his approach. The happenings in the horse opera or space opera or blood-and-thunder piece are related only to an unreal world to which he likes to escape occasionally. Escape is, of course, a legitimate function of literature, though a minor one.

On the other hand, the secret of the success of juvenile fiction, the junior novel, is that it is literally real in a surface sense. It requires only literal identification, no search for correlative experience. Perhaps this is as it should be in early adolescence. Mary or Joe reads a novel about a school like theirs, a family much like their own, people like those they know, problems literally similar to those they are encountering. The work then has true meaning for they find themselves in it so easily.

Abstract identification or entry, through the avenue of correlative experience, is quite another matter, but it is not beyond most high school students. What is the teacher's role? Perhaps we cannot really *teach* imaginative entry but certainly we can *promote* it. We can help, first, by selecting for study those works which offer a legitimate chance for the student to use his experiences as the touchstone for imaginative entry; second, by helping him to think about his experiences in connection with those recreated in the work; and, third, by helping him to overcome some of the obstacles to imaginative entry which particular literary forms may present.

There is one question which teachers of literature must live with constantly: what basis does the student have for entering into the experience of this work through plumbing of correlative experience? We cannot expect most adolescents to identify with Jake Barnes, of *The Sun Also Rises*, in his frustration over the impossibility of consummating his love for Lady Brett. Nor can many adolescents perceive the mythic import of T. S. Eliot's *The Wasteland* or the philosophic basis of much of the poetry of Wallace Stevens, to cite a few examples from modern literature. Conversely, it is often true that we underestimate the potential power of adolescent experience. We consider Shakespearean drama, for example, highly difficult reading for adolescents, and indeed, Shakespeare does present difficulties for many students, some of which I discuss later. Yet the sacrosanct aura surrounding Shakespeare discourages many students from attempting to relate their experience to that in the plays. Maynard Mack (5) points out that many adolescents have, with Macbeth, been tempted and fallen; with Othello, they have been deceived by appearances or false friendship; like Hamlet, they have been sorely perplexed and disillusioned. The teacher's efforts to make students see these relationships are far more

important than his efforts to teach scansion of iambic pentameter.

Each of the literary genres presents certain obstacles to imaginative entry. A first essential is that the student establish as clearly as possible the time and place setting, the general context, of the selection. In fiction, this may require an orientation to plot structure. Much good fiction begins *in medias res*. Some modern stories begin at the end and retract matters to the beginning. Flashbacks, switches in chronology, may cause problems. Sometimes the student must establish context through inference from scanty clues. If he is reading George Barker's fine "Sonnet to My Mother," say, he must infer that a soldier in World War II is writing of his mother in bomb-haunted London.

In poetry, it is important that at the outset the reader establish the nature of the setting and characters, that he approach a poem as a kind of drama in which the "speaker" may be the poet talking to himself; the poet addressing an audience of one or more persons, who may or may not speak in the poem—this is the case, for example, in Matthew Arnold's "*Dover Beach;*" or someone other than the poet, as in a Browning monologue. Ultimately, the student will have to go on to deal with the problem of tone in a poem. In W. H. Auden's "The Unknown Citizen," for example, meaning is derived largely from the ironic tone.

Perception of Meaning or Central Purpose

Thomas Hardy once wrote that the "writer's problem is, how to strike the balance between the uncommon or ordinary so as on the one hand to give interest, on the other to give reality." Our student reader's problem is parallel: how to immerse himself in the experience of the work and yet retain his aesthetic distance so as to organize the work for the perception of meaning. The word "easy" (a most slippery term when used in connection with literature) can best be applied to those selections in which very little organization for perception of meaning is required, the traditional romance, for example, in which the experience represented is exempt from the conditions we know usually attach to experience, or the highly sentimental or didactic poem which strings clichés together.

Our second emphasis, then, is on guiding the student in exercising those skills which are essential to the perception of meaning or central purpose. Perhaps the underlying skill is that of going from particulars to universals, and the basic process that of induction rather than deduction. That is, rather than defining figures of speech, let's say, and then saying in effect to the student, "Now find them in the poem," we begin with the poem

as totality, then try to help the student to relate figures of speech to this totality.

In reading fiction and drama, it is important for the reader to develop what might be called the method of hypothesis. That is, from the very first, he constantly has to hypothesize on the basis of what happens, what is said, what objects or scenes are introduced. The reading becomes a matter of continually positing and testing hypotheses, some of which will receive sufficient test in a few pages, others not until the work is finished and the reader has reflected on it. The reader's hypothesis, for example, that Zeena's feigning of illness is used as a weapon for control of Ethan Frome cannot be finally accepted or rejected until the end of the novel. This is not to suggest that any two readers necessarily will come to the same conclusions or even raise the same hypotheses, but it is the process that is important. Student interpretations will be judged, then, mainly in terms of the process used in arriving at the interpretation.

It is the easy and natural way for the reader to flow along with the plot of a novel or drama, without any real consideration of the value or use of individual scenes or episodes. Such reading makes of *The Red Badge of Courage*, for instance, a rather flat tale of a farm boy at war. Episodes or scenes, the reader should come to know, may be used for various purposes—to reveal character, to heighten effects, to provide meaning through allegory or satire or irony, simply to satisfy the reader's curiosity about what has happened to someone or what happened as aftermath to some event. The reader, then, must extend his hypothesizing to each scene or episode. In the fine little novel by Paul Annixter, *Swiftwater*, there is a scene in which the young protagonist meets and kills a wolverine on his trapline. The scene is generally symbolic of the meeting with evil, and is a key scene in developing the theme of the boy's growing up. In *Huckleberry Finn*, to take another example, individual scenes assume great importance. The one in which Colonel Sherburn shoots Boggs and then faces down and disperses the mob that follows him to his house has broad meaning of itself in Mark Twain's view of the world, a meaning which can be interpreted without reference to anything else in the novel.

But of course individual scenes or episodes must be interpreted, too, in reference to all the rest of the work, and the reader must be willing to hypothesize not only about immediate meanings but also about the possibility of total allegorical or symbolic framework in a novel or play.

The modern short story often achieves meaning through what James Joyce called an "epiphany," "a revelation or moment of understanding

beyond which the central character can never again be what he was before." (10) The reader's perception of this revelation is dependent on his coming to know the character, and character may be revealed in a number of ways: direct explanation by the author; description of the person, his clothing, his environment; the actions of the person; what the person says; the thoughts of the person; the way in which other people talk to the person; what other people say about the person; how other people react to or because of the person; how the person reacts to others. (4)

Interpretation of symbolism in fiction and drama especially requires use of the method of hypothesis. The reader of Fitzgerald's *The Great Gatsby,* for example, who early in the book does not set up hypotheses concerning symbolic meaning of the valley of ashes, the great dumping ground outside of New York City, or of the billboard with the eyes of T. J. Eckleburg, cannot accomplish a full reading. The same is true of Chekhov's *The Cherry Orchard,* in which the orchard is a basic symbol, or of Conrad's *The Heart of Darkness,* in which the ivory is the basic symbol. Much is lost if readers do not recognize these unifying symbols. In such selections it might be well to direct students' reading by telling them in advance what the basic symbol is. Where they go from there will be up to them.

In fiction, hypothesis is important, too, in considering point of view, so tied to meaning in truly unified fiction. Why did Mark Twain force himself to see the world through the eyes of Huckleberry Finn, Stephen Crane through the eyes of Henry Fleming, Scott Fitzgerald through the eyes of Nick Carraway, Herman Melville through the eyes of Ishmael? Though final answers may differ, unless these questions are asked, the student is not on the track of important meaning.

Special Problems in Poetry and Drama.

Poetry, in general, presents to adolescents more obstacles to perception of meaning or effect than do the other genres. Poetry is greatly compressed; it uses unusual language or uses language in unusual ways; it often treats of subject matter that the ordinary person seldom thinks about; modern poetry is especially difficult because of its subjective and intellectual qualities. And yet to learn to read poetry well is to learn to think lyrically and this, I believe, is the zenith in mastery of language.

The mere mechanics of poetry may cause difficulty to younger and less able students, who must be weaned away from a natural tendency to read

line by line, letting the voice fall on the right margin, regardless of the punctuation. Naturally this kind of reading can make comprehension impossible. Inversion in word order, characteristic of poetry, poses another difficulty for some students who might read through these lines with no idea of the subject-predicate relationship:

> Full many a gem of purest ray serene,
> The dark unfathomed caves of ocean bear

Ellipsis, also common in poetry, is a related difficulty in such lines as:

> Stone walls do not a prison make,
> Nor iron bars a cage.

In short, a starting point is to teach the student that in reading poetry, too, he must be clear on the syntax.

I mentioned earlier that it may be helpful for students to approach each poem initially as a kind of play in which the characters and setting must be ascertained as clearly as possible. Along with this goes a related approach which helps students in the reading of lyric poems, I have found, though the approach is based on an over simplification. Many lyric poems fall basically into three parts. The first part is an expression of the experience that triggered the poem; the second, an immediate reaction to the experience, possibly just the expression of a mood or image; the third, some kind of universal application of the experience or broader reflection on its meaning or effect. In Karl Shapiro's "Auto Wreck"—a fine selection for teaching in high school—we have first the image of the ambulance, pulsing red light, racing to the scene of the accident where the mangled bodies are put aboard; then we have the immediate reaction, the stunned feelings of those who witnessed the accident, their banal remarks; finally, we have the reflection, a wonderment at the senselessness of this kind of death. If someone were to count all the lyrics in the language, he might find more that do not fit this pattern than do. But enough do fit to make the approach helpful.

Most artistic poetry can be interpreted at various levels of meaning. Robert Frost's much-explicated little poem, "Stopping By Woods on a Snowy Evening," for example, can be interpreted quite legitimately on at least three levels. First, it may be a poem about a man who stops to enjoy the beauty of a snowfall in the woods at night, but who can't stay long because he must get home. Second, it may be a poem about a man whose need to hurry on from a scene of beauty reminds him of the general way of life, the need for allegiance to responsibility. Finally, it

may be an expression of the death wish, with the dark woods symbolizing death. Students should be encouraged to start with the simplest interpretation they can support and to branch out from there. Frequently bright students feel that if they can not come up with an esoteric, far-out interpretation they have not done well. Other students, awed in the presence of serious poetry, feel that there is one official interpretation of a poem which can be unlocked by those who somehow have been admitted into the mysterious inner circle.

Like all art forms, poetry has its particular conventions and techniques. How extensively the teacher should deal with technique or craftsmanship in teaching poetry has long stirred controversy. One definite answer is given by Sauer (11), who feels that in the high school students should learn the following about the technique of poetry:

1. basic meters—iambic, trochaic, anapestic, dactylic, and spondaic
2. distinction among rhymed verse, blank verse, and free verse
3. line lengths—dimeter, trimeter, tetrameter, pentameter, hexameter
4. stanza patterns—quatrain, couplet, sonnet, etc.
5. techniques for attaining tonal effects—alliteration, assonance, consonance, and onomatopoeia

Though these matters are important, work with them is plowing of sterile ground in many schools. They gain their importance only when students are ready to use them and when they are helpful in perceiving meaning or effect in given poems. When this occurs it must be left to the judgment of individual teachers.

Though many of the problems in reading drama are akin to those of fiction, there are others specific to the form. The essence of drama is conflict, and the student must become aware of the nature of conflict and the way in which it is handled. Visualization, of course, is at a premium in drama. Though some plays, most Shakespearean dramas among them, may be visualized as is a novel, there are some in which the happenings must be visualized upon a stage, Thorton Wilder's OUR TOWN, for instance. Thus readiness for the reading of some plays requires an orientation to basic dramaturgy—stage conventions and stage directions. In many plays, the opening exposition through dialogue may be of crucial importance if the reader is to establish the basic dramatic situation. Dialogue, in general, is basic in drama, for upon it depend characterization, creation of mood, and advancement of the action.

The reading of Shakespearean drama, a central experience in many

high school literature programs, presents some special obstacles to the perception of meaning. A foremost one, of course, is language, for the English language has changed considerably in the past four centuries. Oral reading by teachers and students together may be necessary in the early experiences with Shakespeare if students are to surmount this barrier. In Shakespearean drama there is an especial need for careful attention to the language, for skillful reading of Shakespeare demands an ear attuned to sublety, paradox, ambiguity, the kind of ear not trained by modern TV programs. The problem of poetic drama is an added difficulty. A particularly succinct statement on this problem is made by Gladys Veidemanis (13) in material soon to be published:

> Besides demonstrating maturity and sensitivity, students reading Shakespeare must develop specific skills for handling poetic drama. T. S. Eliot, in "The Three Voices of Poetry," well reminds us that the poetic line in drama bears the weight of three responsibilities: conveying plot and character while retaining its poetic form. Students must thus acquire a series of reading skills that work together. First they must learn to read blank verse without halting at the end of each line or being trapped by occasional archaic expressions or extended figures of speech. Then they must learn to see how specific passages reflect the character traits of the speaker. For example, they should come to detect how Polonius' mishandling of language reflects his mismanagement of human affairs, or how Laertes betrays a strain of superficiality by indulging in florid bombast. They should also become skilled enough to discern how Hamlet's shifts from introspection and depression to passionate anger with himself and the world are precisely reflected by the variety of his speech, the flavor of his rhetoric. Unless they see language as mirroring essential character traits, they will miss much of the impact of the Shakespearean line.
>
> Students must also discover how richly Shakespeare uses imagery to enforce mood and idea. For example, how repeatedly throughout the history plays he apostrophizes sleep and thereby emphasizes the wearying responsibility of a king upon whose head "uneasy" lies the crown. Using the images of disease, plague, disruption, insanity, and revolt in *Julius Caesar*, *Macbeth*, *Hamlet*, and *Lear*, Shakespeare succeeds in conveying the very atmosphere of states whose social organization has suffered violent change and upheaval. John Ciardi also reminds us that Shakespeare's verse needs to be studied for its own sake as poetry, particularly for its precise word choice, skillfully suggestive overtones, unified construction. Rather than wearying every line with exhausting interpretation, however, we need to vary discussion procedures, letting one passage, for example, serve as a reflection of an inner state

of mind, another as revealing specific character traits, yet another to show contrast and irony. Often it may be necessary to concentrate on plot events alone, for verse analysis must never become so laborious that students feel they are making no headway in the play.

Perception of Artistic Unity and Significance

It is the rare high school teacher of literature who has not been confronted many times with the time-honored questions, "Why is this supposed to be so good?" or "What's so great about this?" These questions may only reflect the student's rebellion at being told, implicitly or explicitly, that he should appreciate this selection because it is great literature. Or, more hopefully, the questions may signal a genuine quest for insight into the literary experience. Whatever the genesis of the questions, satisfying answers to them can come only as the individual is able to perceive the artistic unity and, beyond that, the artistic significance of a work of literature. And when the student reaches this level he no longer really needs the services of a teacher. It is not defeatism, then, to say that only a small minority of students will reach this level in the high school, but that many may be pointed toward it.

I mentioned earlier the possibility of falling into the fallacy of forcing students to judge a work of art before they have made sufficient progress in the skills leading to imaginative entry and perception of meaning or purpose. The experience of too many students in studying a selection of literature is limited to reading of the piece followed by discussion in which the selection is criticised or dissected. Is it true to life?—whatever that may mean. Were the characters real? Was the plot improbable? Was the author skillful in description? Until the student has become aware of the central purpose, meaning, or effect of the work—this in turn dependent upon imaginative entry—he is in no position to answer such questions honestly.

For example, what about this much-used phrase, "true to life?" It is important to make students understand that it is verismilitude, the appearance of truth or reality, that we are talking about, not reality itself. Literature is not life, and verisimilitude in a selection has to be judged not only by the reader's experience with life, but by life as presented in the work. Is the coincidence that brings Stephen Kumalo and Jarvis together toward the end of *Cry, the Beloved Country* contrived, as we consider all that has gone before?

What about the reality of characters? It is all to the good that we

have worked hard to make students aware of stereotypes of character. Yet is seems important, too, at the level of judging artistic unity and significance, to make a distinction between stereotypes and archetypes. Archetypes are a part of our mythology. Representing a type of man, and evoking, in the words of the psychologist Jung a "racial memory," the archetype may be greatly individual like Joe, in *Great Expectations*, who is a representative of the poetic approach to life. The stereotyped character, on the other hand, lacks individuality and is based not on racial experience but on over-simplification and half-truth.

The student who is to judge the artistic unity of a work of literature must be able to recognize any discordances: the irrelevant details and descriptions that clutter bad fiction; the forced rhymes and stale metaphors with which bad poetry is studded. The perfectly unified selection is like the equation in mathematics—everything in balance, nothing unessential. The result is a truth that is truer than real life itself.

Beyond consideration of the unity of a work of literature lies judgment of significance. Perrine (7) poses as the ultimate test of significance in literature: "How many and how diverse are the materials which are unified in the work?" When the student reaches a level at which he can deal with this question, he will be able to assign a proper niche to the story or plot, no matter how ingenious, and he will be beyond asking, "Why can't we read this just to enjoy the story?" And he will see the narrowness and relative insignificance of the pleasant sounding "Build thee more stately mansions, O my soul" or the "Brave men all remind us, We can make our lives sublime" type of verse.

The student's progress toward felt knowledge thus makes its tenuous and complicated way. The ability and discernment that make possible this indispensable approach to knowledge are, in the words of Perrine (8), "partly a native endowment, partly the product of maturity and experience, partly the achievement of conscious study, training, and intellectual effort. They cannot be achieved suddenly or quickly; they can never be achieved in perfection. The pull is a long pull and a hard pull. But success, even relative success, brings enormous rewards in enrichment and command of life."

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Discussion

Sr. Julitta: Certainly Dr. Burton's paper has given us the ideal for teaching and reading literature at the secondary level. However, in some of our literature classes we might need to stay with more juvenile literature as the starting point, and for some it is the final point also. I believe much of the dislike for reading literature comes from the fact that we gear it at too high a level for some students.

DR. SHAFER: You recall that yesterday both the papers on implementing and organizing for reading instruction suggested that the reading specialist go to the subject-matter teacher and ask him for a breakdown of skills in his field. It is this that Dr. Burton has attempted to do in his paper when he describes the various kinds of sequences through which one must pass if he is going to learn to read literature at his highest level of comprehension.

Now, as Professor Robinson pointed out yesterday, we do not have much research on the matter of the learning sequence in reading. Burton is proposing a sequence, it seems to me, which we could conceivably try out in many ways and in many forms. We might build a strong case for this kind of sequence.

I think it's also very necessary to indicate, as Sister Julitta did, the vast spectrum of experience background which students bring with them. Now it's quite clear that a student reading a poem with one kind of experience background may get different meanings from the poem than a student with a different experience background. In fact, this is the point of Burton's second layer.

I think that we have not yet found the answer at all, nor does he attempt to suggest an answer, other than a kind of cumulative development from elementary through secondary school. This kind of development is necessary if most of the students in the secondary school are to arrive ultimately at the ability needed for perception of artistic unity and significance.

I think it is a very valuable paper in that it does contribute a breakdown of the abilities necessary in reading literature; and there are suggestions as to how literature might be taught.

DR. ROBINSON: I found the words beautifully put together but I had great difficulty with the ideas of this paper; primarily, probably, because they do not fit the patterns that we, in reading, have been thinking about. I wonder whether Dr. Burton has equated reading and appreciation. If so, are they, indeed, one and the same, or do they have different ingredients?

Another question I have deals with vocabulary. What is *imaginative entry?* Is reading literature impossible for the high school student who hasn't experienced it? He says, "A requisite is that the student must have done this before."

I wonder if perhaps in different terms I might understand this paper better and be able to relate it to reading.

DR. SIMMONS:[1] Let me respond to the questions as I noted them on my sheet. The first question suggested that the abilities that Dr. Burton has outlined are somewhat unreasonable. I think he said that the ability to understand significance and unity in literature was the highest form, and that very few students hit that level. We can move students, however, from the level where literature is an escape experience to literature which emphasizes experi-

[1]Dr. Burton's paper was read by Dr. John Simmons, Florida State University.

ences with which they have often been involved. This is the time for the junior novel. This is where imaginative entry comes in. The student isn't always successful in this area; his successes are often mingled with failure. But I think his ability is developed by reading some of these junior novels first before attempting something like Hemingway.

Appreciation, I believe, is the highest form of comprehension. Burton said that we don't really teach it, but point the students in the direction, fully recognizing that many of them will not get beyond the struggle with imaginative entry, the struggle to relate their experiences to the experiences expressed in transitional literature. . . .

COMMENT: I want to say three things. First, I agree with Brother Leonard; this is a profound and significant paper, giving us a clear concept of reading abilities related to literature. Secondly, the language should not detract from our understanding of what Dr. Burton says. When he says, "imaginative entry," as a reading teacher, I said to myself, "Oh, this means relating the experience of the child to what he's going to read." My third point is that we should not overlook vicarious experience in relating to what's going to be read. Much on television can be related to the literature children are reading; much can come from other media, too. All experiences, I think, do not have to be real.

RUTH STRANG

UNIVERSITY OF ARIZONA

8. Clinical Study of High School Students' Reading

WHEN is a reading case a clinical reading case? In general, we would say that referral for clinical service is indicated (1) when teachers have been unable to help the individual despite their best efforts, (2) when the reading difficulty is adversely affecting other aspects of the student's life, (3) when the reading retardation is clearly not caused by lack of mental ability, and (4) when any of the following signs and symptoms are present to a marked degree: inability to concentrate on language tasks; inability to put forth the effort that reading requires; passive resistance to reading; underlying factors such as fear of growing up that conflicts with a normal adolescent desire to be independent; a gap in the chain of competencies that are needed for success in reading; irrational confusion of letters and words and in sequence of ideas which suggests neural disorganization—this hypothesis may be checked by use of the Bender *Visual Motor Gestalt Test* and by neurological examination; insufficient command of the structure and vocabulary of the spoken language, due to a non-English speaking background or educational deprivation.

Concepts to Consider

Certain concepts underlie the diagnosis and treatment of clinical cases. One of these concepts is that reading development is a process of "becoming." The reading problem is not static. It has developed over a period of years; it is changing at the present moment; it is being affected by the client's hopes and fears of the future. We often are not fully aware of the extent to which the adolescent's concern about his future may affect his present progress in reading. At the Woods Schools for Exceptional Children I often noticed that some of the older boys and girls

stopped making progress. It appeared that they had begun to wonder what would happen to them if their parents died, whether they would be able to find work that they could do, whether they would ever marry and lead normal family lives.

To relieve some of their anxiety through effective reading instruction, and to help adolescents solve some of their problems about the future is a necessary part of the reading clinician's work. In certain cases until some of the client's inner conflicts are resolved, he is not able to apply learning methods to improve his reading.

The fact that they will need reading ability in order to get and hold a job and in order to maintain normal social relations is a strong motivation for older adolescents to learn to read better.

Emphasis in reading diagnosis as in psychotherapy should be directed toward identifying potential ability and strengthening the client as a whole. In many instances, if this ego-strengthening is done, the individual will continue to grow and be better able to handle his reading difficulties. To be sure, the nature of the reading deficiency must also be known, and efforts must be made to correct it. We should look for the causes of an interruption of the normal learning process, try to remove the causes, and help the individual to resume his normal or optimum learning.

In addition to the individual's past, present, and future, there are other factors which bear upon his present reading development and difficulties: his drive toward growth, his relationships, the influence of the clinical setting and the wider environment in which he lives, and the interaction within this environment. The clinical study of high school students' reading is indeed a complex procedure.

Each Case Unique

Since the causation of reading problems is so complex, there seems to be no substitute for highly individualized diagnosis and treatment. In our reading clinics we find many varieties of retarded adolescent readers.

One student, for some reason, may have failed to master word recognition skills; he may need individual instruction and practice at this point so that he can go on to higher levels. He may have the ability to acquire other reading skills once he has mastered the primary processes. Others will be seriously lacking in the ability to use their word recognition skills to comprehend the author's literal meaning and from there to go ahead to higher levels of comprehension, appreciation, and applications. Many high school students feel the need to read more rapidly without loss of

comprehension appropriate to the material and their purpose.

Another student may have been handicapped by his cultural and societal environment; for him, the teaching techniques that are employed in regular classes may have to be modified or even radically changed.

The "acting out" or delinquent boy who is also a retarded reader has special goals and needs. He is a problem because the school's goals are inappropriate for him, or because the school has not provided the instruction and materials that he needs to achieve *its* goals. Such a youngster often is inaccessible to reading instruction until his barriers of hostility and aggression are broken down. This may be accomplished by giving him periods of exclusive attention from an understanding adult who makes it plain that he cares and will not relax his efforts to help. One way in which the clinician can show the boy that he cares is by using his influence to change the school conditions that are constantly contributing to the boy's failure and heightening his negative feelings.

Other adolescent retarded readers may owe their difficulties to a variety of emotional problems. The reading problem may stem from disturbed family conditions or other personal relations. Or the emotional problem may have arisen from initial failure in learning to read. In either event, the emotional problem intensifies the reading difficulty, and vice versa.

Among adolescents who are slow in learning, as Kirk has pointed out, we may find many who have the same mental age but very different mental abilities. "Among a group of children so classified we will find a variety of slow learners, each requiring a different educational or remedial program." (3) These students often become clinical cases because they have not found appropriate goals and have not been treated with appropriate methods and materials of instruction. We often fail to recognize their difficulty in making the transition from recognizing words and forming sound-letter associations to reading sentences and books, and so neglect to provide the appropriate intermediate steps.

An undetermined number of high school reading cases fall within the category of neurological disorganization or brain damage. Reading disability may be only one symptom of brain dysfunction. These clients show great variation in performance and mastery of skills, and require a corresponding variety of treatment procedures. Their behavior in a group may be very different from their behavior in individual contacts. For this reason they should also be observed in group situations. Diagnosis by both teacher and clinician should be a continuing process.

Two procedures seem to be particularly helpful to individuals with neurological disorganization: (1) reduce extraneous stimulation, and (2) sharpen the clue to which you want the child to respond. Two general clinical principles seem to be especially important for individuals with neurological disorganization: (1) start at the point where they can achieve success, and (2) begin to build up the skills in which they are weak.

Both clinical and classroom situations should be flexible, though not unstructured. A certain amount of routine gives anxious youngsters a sense of security. Any procedure that works—which has a beneficial effect on the individual as a whole as well as on his progress in reading—is a good procedure for him.

Certain adolescent reading cases make only limited progress in the long run, regardless of their I.Q. as measured by verbal and non-verbal tests. One such boy, seventeen years of age, was referred to a reading center after he had had the services of many psychologists, a psychiatrist, and several clinics. Since the reading center was less well equipped with staff and clinical facilities than the agencies and individuals to which the boy had already been referred, the director of the center did not accept the case. In explanation she wrote the following letter to his highly intelligent parents:

"Since we doubt our ability to be helpful to your son, we are not accepting your application. If he is taken hopefully to another center where he makes no more improvement in reading than at the clinics he previously attended, this might have a detrimental effect on the boy; it might reinforce his idea of himself as a person who can't learn to read.

"Perhaps the most helpful thing to do at present would be to ignore his reading problem and focus attention on the other avenues by which he has been able to learn. This might reduce his anxiety about his reading—intense anxiety interferes with learning. It would almost certainly increase his self-confidence and self-esteem, and thus enable him to make further progress in the things he *can* do.

"Later, when he has at least partially overcome his fear of not being able to read, he may be accessible to instruction in reading. It may be, of course, that he is one of the rare cases that cannot learn through reading. At the University of Chicago where a most intensive study of reading cases has explored all the possible causes of reading disability—neurological, physical, psychological, educational—it was estimated that a small fraction of one per cent of the cases were incapable of learning to read.

"For these very rare cases, other avenues of learning such as pictures, diagrams, films, radio, records, trips, discussion, and other auditory-visual

aides were recommended. It was also recommended that they be given a curriculum tailor-made to their needs. Any experimentally-minded high school principal or college president should be interested in this kind of curriculum. The boy's program should comprise only the things he can learn. He would be permitted to sit in regular classes and listen to the instruction and discussion, but would not be expected to do any reading. Instead he might listen to records, receive individual instruction, and study pictures and diagrams. For example, there might be useful pictures and diagrams in *Popular Science* and other science magazines intended for high school students, as well as in technical magazines like *Science* and in a wide variety of science books. He should have a congenial buddy who would sit near him and whom he could ask to read any captions or explanations that he needed to understand. All the teachers participating in his special program should understand it thoroughly and should constantly guard against making him feel embarrassed. The other students should be helped to accept him as a person pursuing an interesting, special program.

"Another possibility is that the boy may have become so accustomed to his reading handicap that he does not want to change. In fact, we *all* resist being changed. If he should develop a strong desire to read—his own desire, not one imposed upon him by someone else—then it might be possible to start from the beginning and give him the necessary instruction step by step as fast as he is able to go.

"As to your question concerning the use of hypnosis in reading cases, my knowledge is very limited. It is my impression that convincing scientific evidence is lacking. Some practitioners have made extravagant claims and dangerous recommendations. Two aspects should be recognized: that hypnosis does not *cure* any reading difficulty, though it may make the person accessible to treatment; and that hypnosis may release undesirable tendencies while freeing the person from detrimental blocks.

"Since your son has been studied so thoroughly and sympathetically, I feel that these general suggestions are the only contribution I can make at this time."

We have mentioned here only a few of the many different kinds of cases that might profit from clinical study. In view of this diversity, both diagnostic and treatment procedures should be individualized.

Standard Diagnostic Procedures

Most reading clinicians use a pattern of diagnostic procedures that includes interviews with parents and with the client himself, information blanks filled in by the school, individual intelligence tests, achievement tests, diagnostic reading tests, a test of listening comprehension, less often

the Bender *Visual Motor Gestalt Test,* and one or more projective techniques. In these ways the clinician (1) obtains information about the client's reading development, (2) seeks to understand causative conditions, and (3) uncovers inhibiting factors. A comprehensive diagnosis would include all these approaches.

Certain basic developmental aspects of reading diagnosis may be covered by tests such as those included in the new *Illinois Test of Psycholinguistic Abilities* by Kirk and McCarthy (4). The abilities and disabilities measured by this test include auditory reception, visual reception, association, vocal expressive and motor expressive disabilities, sound blending, perceptual speed, visual closure, and visual discrimination. These factors seem to bear upon reading efficiency. This test, or other more familiar diagnostic reading tests (5), would detect strengths and weaknesses in these basic competencies. The 1963 *Gray Oral Reading Tests* "provide an objective measure of growth in oral reading from early first grade to college; and . . . aid in the diagnosis of oral reading difficulties" (6). The oral reading tests supplement silent reading tests such as the *Sequential Tests of Educational Progress* (2). An analysis of the student's responses on the STEP reading test yields diagnostic information on five major reading-for-comprehension skills:

Ability to reproduce ideas
Ability to translate ideas and make inferences
Ability to analyze motivation
Ability to analyze presentation
Ability to criticize.

Other reading tests too numerous to mention here yield information about various kinds of reading achievement.

The *Revised Stanford-Binet Intelligence Scale,* third revision; the *Wechsler Adult Intelligence Scale;* and the *Wechsler Intelligence Scale for Children,* if analyzed, would indicate the individual's pattern of mental abilities.

Different mental abilities seem to be involved in reading success at different grade levels. Ability to recognize spatial relations is associated with success in beginning reading. Perceptual ability seems to be more necessary for success in the first and second grades, and ability in concept formation may prove to be increasingly important in more advanced reading. Braun (1) reported ability in concept formation to be more closely related to reading achievement at the fifth and seventh grades than intelligence. As a measure of concept formation, Braun used a simple

test consisting of twenty concepts with six cards per concept. Four words were typed on each card, one of which has something in common with each of the other six cards. The subject is asked to tell the concept common to each of the six cards. Tests of listening comprehension also have been used to predict reading potential. A test of listening comprehension may indicate superior ability to comprehend when listening, as contrasted with reading comprehension of similar material.

Many clues about possible causative factors may be obtained in parent interviews. It may become evident that the child was subjected to child-care practices that may have caused apathy or hostility, that there were disturbances in the parent-child and/or sibling relationships, that the child lacked perceptual and/or verbal stimulation, that he lacked intellectual interests during his school years, that he was under excessive pressure to achieve, or that his progress in reading was treated with indifference. There could be many other factors.

Similarly, information gleaned from school records and from interviews with the client also helps the clinician to understand the complex causation of these cases. From all these sources the clinician obtains a multiplicity of facts which he then tries to synthesize into meaningful patterns from which he can derive hypotheses to guide his further work with the case. Actually, the process of interpreting and synthesizing case data goes on continuously. As the clinician works with a case, he acquires both increased sensitivity to the individual and a deeper understanding of the reading process (1).

In the light of the concepts stated at the beginning of this article, can we suggest improvements in our present clinical methods for the study of high school students' reading?

Suggested Improvements in Diagnostic Procedures

The first suggestion is to interweave diagnosis with treatment. Instead of a preliminary series of diagnostic procedures, we would begin with the reading problem as the client sees it. Most high-school-age retarded readers are greatly concerned about their reading. They have come to the clinic for help. They become impatient with several periods of diagnosis. Moreover, not being able to answer the difficult items on the tests increases their sense of failure and inadequacy.

As we work with the client on the reading problems with which he wants help, we obtain diagnostic information which we can apply immediately. There is no gap between the diagnostic information obtained

and its use. Although we may lack some diagnostic information we could have used, at least we have not wasted time obtaining data irrelevant to this particular problem. Another advantage of this approach is that the client from the beginning is taking initiative in the solving of his problem; he is not merely giving information that the clinician can use in doing something for him.

The second suggestion is to go more deeply into the motivation, or rather lack of motivation, of high school cases. To what extent are these retarded readers hindered from putting forth effort because their curiosity, their need to know, has been stifled? To what extent are they deterred from learning by extreme anxiety or by a depressing sense of failure? On the other hand, do they lack the minimum degree of concern or anxiety that facilitates learning? To what extent was their level of aspiration and performance lowered by lack of previous success or the hope of success?

The third suggestion is to "accentuate the positive." The word "diagnosis" has a pathological connotation. The diagnostician often emphasizes errors. The clinician is concerned with correcting weaknesses. Granted that clients should correct errors and learn from mistakes, is there not danger in neglecting success as an important motivating force? With this idea in mind, some clinicians begin the synthesis and summary of their diagnostic information with the heading "Positive Factors."

The fourth suggestion is to help the client use resources within himself to discover and solve his own reading problems. When properly encouraged many adolescents, and even younger children, are able to give important clues about their reading development and difficulties. This principle of self-direction was illustrated in the case of George. The worker was young, engaging, but inexperienced. He went to the first interview with the idea that George could think through his reading problem and that he would encourage him to do so. After an initial period of floundering and non-communication, the boy began to respond to the worker's sincere concern and appreciation of his efforts. Here are excerpts of some of the verbal communications that show the movement in this interview. Here a boy, initially unresponsive, stimulated by the worker's non-directive comments, attention, and encouragement became more responsive as the interview proceeded and contributed many insights about his reading process.

Worker: Well, suppose we begin by your telling me why you're here, George.
George: Well, I guess I'm here to learn something . . . how to read . . . I

don't know what to say.
W: What are you thinking?
G: Thinking of something to say . . .
W: What sort of thing do you want to learn?
G: Well, improve my reading, I guess. And how to pronounce big words . . . say them. All that stuff. What do you usually teach the children?
W: It depends on what they need. You would need some things. Others would need something else. That's the way it goes.
G: (He seemed to make sense of that) Yeah.
W: That's why I wondered if we could get at why you're here, what you feel *you* need.
G: You know, it's funny. Sometimes when I'm reading there . . . there isn't any word there. I put 'em there, like . . . uh . . . small words . . .
W: You stick them in.
G: Yeah, it sounds better to me.
W: Tell me more.
G: Sometimes when I'm reading there I come to the end of the sentence, you know, instead of stopping there for a few seconds I go right on.
W: I see . . .
G: Yeah, without stopping or thinking anything of it. Sometimes I don't even notice it but keep on reading.
W: That is good to know. You notice these things yourself?
G: Yeah.
W: What else have you noticed?
G: Let me think . . . sometimes when I'm reading, a word like *there* and *their,* and I don't see the difference there. They both sound the same to me, so when you write you get all mixed up . . . Of course there's one thing I don't like—when you're reading there and come to a word you can't pronounce, and the teacher tells me what it is.
W: Oh, yes.
G: I'd like to know it myself . . .
W: How do you feel when that happens?
G: Well, with the kids in my class I don't feel much ashamed cause they can hardly even read. Some of them can't read little words.
W: Sometimes little words are more troublesome than big ones.
G: Yeah. Big words you can get little by little.
W: Those are very good observations. Not many people can see their own reading as clearly as that."

Thus the worker not only obtained insight into some of the boy's reading problems and how he felt about them, but also conveyed the idea that improving his reading was the boy's responsibility.

Clients may also reveal significant attitudes toward themselves and

toward school, as in the following quotations from an interview with a seventeen-year-old severely retarded reader:

Boy: There are some students who feel that they don't belong. They feel inferior to others in the class.

Clinician: Is it because they aren't bright or because they aren't sure of themselves? If the teacher calls on them, what might they do?

B: You might say nothing.

C: Then what does the class think?

B: Dumb, that's like me. I do that. The teacher calls on me and if I'm not sure of myself I won't answer.

C: Well, does that mean you are dumb?

B: Not necessarily. It means I'm not sure . . . that type of guy might try to be funny. He'd be the clown type . . . you would rather make a wise crack in class and have everyone know I was being funny than be serious and have them laugh at me. Today I did that. I was pretty sure I knew the answer when the teacher called on me but I wouldn't answer.

In this and other interviews this boy clarified for himself and the worker his basic conflict—between his aspiration to become a scientist or inventor and his deep-seated conviction that he would never be able to learn to read. In the few excerpts quoted, we get a glimpse of the school conditions that contributed to his feeling of inferiority.

The fifth suggestion is that we become still more aware of the influence of personal relationships. We have been much concerned with the parent-child and sibling relations that seem to have caused or intensified an adolescent's reading problem. The clinician has some responsibility for creating more favorable home conditions, preferably by providing individual or group counseling or therapy for the parents of reading cases. In addition to working directly with the client to improve his reading, build his psychological strengths and increase his resistance to unfavorable conditions, the clinician is concerned with removing or changing conditions that are adversely affecting the individual's reading progress. Sometimes he can recommend that the adolescent be removed from a blighting situation. Sometimes he can help protect him from excessive stress. Unless this is done, individual work may be futile.

But have we been sufficiently alert to the possibilities of the client-clinician relationship during the interview periods?

One withdrawn and apathetic teen-age boy learned to relate himself to the clinician in the course of their work together. This success in personal relations was an important factor in his reading improvement. Clinical treatment satisfies the client's need for sympathy and for hope

of relief from the embarrassment and the sense of failure caused by the discrepancy between his aspirations and his performance. It is a comfort both to the client and to his relatives and teachers to know that something is being done about his problem.

Outside the sessions with the clinician, the client is experiencing various types of interaction with other people which may either promote or block his progress in reading. There is the interaction in the classroom to which the student returns after his session with the clinician. Too often the client loses the self-confidence that has been built up in the reading session when faced with the same old assignment of reading material that is too hard for him, the same old criticism by the teacher, the same old feelings of inferiority to his classmates. To avoid these detrimental effects, the clinician should help the teacher to understand the importance of friendly interaction and hospitable atmosphere in the classroom, and try to supply the teacher with reading material that will not be frustrating to the retarded reader.

The sixth suggestion is to put our psychological techniques and knowledge of learning theory at the disposal of the client. Instead of our using our psychological techniques and learning theory *on* the retarded reader, could we teach him our techniques and encourage him to apply them himself for his own ends?

With respect to this approach of teaching the client what we know about learning to read and leaving him free to apply this knowledge to his own learning, we might ask: When, and for what kinds of cases, would this procedure be appropriate? The answer would seem to be: when the client has the mental ability to understand; when he is able to take the initiative in applying the learning theory and procedures; when the range of possibilities is narrow and the risk of failure is not too great.

The seventh suggestion relates to the responsibility of the clinician for acquiring a repertory of tested learning methods and materials that he can put at the disposal of the client. Included in this repertory would be a knowledge of structural linguistics as an aid to sentence meaning and phonetic methods that give students a key to word recognition. For example, a boy who had made little progress in learning to read was taught the short *a* sound in several familiar words. This instruction led to the boy's discovery that he could read simple words and sentences without further study, by drawing on his knowledge of initial and final consonant sound-letter associations. This experience was exciting to him.

It was a moment of discovery. He had found an organizing principle that enabled him to unlock unfamiliar words. Now he had a key to reading on his own. The fact that the words were "easy" words and some of the sentences nonsensical did not bother him. It was an achievement for him to be able to read

The fat cat had a bat.
Dan sat on a hat.

and other sentences that he made up for himself. He learned more readily when he made up some of his own reading material, as in the familiar language experience method, which is as appropriate for high school retarded readers as it is for beginners in the primary grades.

The well-known Fernald or kinesthetic method has been effective with many severely retarded readers of high school age. The clinician puts this method at the disposal of the client. He describes it, he demonstrates it, he explains why it has been effective with high school and college students who have not learned by other methods. He encourages the client to take the initiative by dictating something that is of interest to him, selecting the words he wants to learn, persisting in the looking-pronouncing-tracing process until he feels that he can write the word without looking at the model. One high school boy with whom this method was successfully used invariably remembered the words he had learned in this way. When the clinician asked him how he remembered the words so well, the boy said, "After I learn the words here, they keep going round and round in my mind." In other words, the visual-auditory images persisted.

Similarly, we should share with the client our most effective methods of sentence and paragraph comprehension; of critical reading; of observing clues as to the appearance, personality, and motives of characters; of learning to feel with the characters portrayed; and of efficient reading for different purposes.

Concluding Statement

While not abandoning the tried-and-true clinical procedure of analyzing the reading process, uncovering possible causes of the client's disability, and then trying to synthesize the information collected in order to formulate hypotheses, may we not experiment with a more dynamic clinical method of studying high school students' reading? The proposed method would recognize the continuing development of the client's reading, his inner urge to improve, the environmental conditions that are either inhibit-

ing or facilitating improvement, and his interaction with the clinician and with others in school and at home. The clinician would begin working with the reading problem as the client sees it, assist him to clarify his perception by means of tests and interviews, teach him learning methods which he can apply to himself, and try to change conditions that are inhibiting his progress.

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Discussion

Dr. Robinson: You will note that the examples Dr. Strang gave were almost entirely dealing with word recognition problems. I should like to suggest, and I imagine that she will agree, that we are also very much concerned in clinical work with a youngster who recognizes words but does not get meaning from what he reads; and this occurs not infrequently among youngsters referred to a reading clinic, particularly when the emphasis has been too strongly on words *per se*.

We must have equal concern, it seems to me, when the problems occur with the building of vocabulary, with the development of the different aspects of comprehension, interpretation and even critical reading.

I agree that relieving children's tensions helps them learn to read; but I have found, in a large majority of the severely retarded readers with whom I've dealt, that learning to read helps reduce the tension because it helps them

get along better in school. Which one attacks first, the reduction of tension or the teaching of reading, depends upon many factors, including the pupil himself. Perhaps it also depends upon the conviction and the training of the person who is working with him. The person trained in guidance and personnel may be able to be more successful in reducing tension first. Someone who is more familiar with teaching may be more successful in teaching reading first; but I think they work both ways.

I would like to distinguish between the major responsibility for the reading clinician and for the psycho-therapist. Our major job is to improve reading and the related areas and the student's general setting as a means to accomplish this; and most reading clinicians are not qualified to do psychotherapy.

On the other hand, we may need to work closely with psychologists and psychotherapists and others who are working for the overall improvement of the individual's emotional and personal adjustment.

Helping students help themselves is extremely important. Some of the programmed materials that are now being prepared may be very useful in this respect.

I hesitate to bring up this point, but I think it illustrates the fact that different people have different convictions and ways of operating. I feel it is extremely important to know as much as one can about a student before he begins to teach rather than fumbling with the teaching process while he's diagnosing. Very often we lose students because they don't learn something from the very first lesson. One of our aims has always been to know enough about the student so that he will have a very successful first lesson in the clinic; and to do this, I feel that I need considerable diagnostic material first. Beyond this, I would agree wholeheartedly that diagnosis needs to continue with every instructional lesson until the last one is completed.

DR. STRANG: I, of course, am very interested in the entire reading process, starting with word recognition and different kinds of comprehension; and I would go further into the feeling aspect, the feeling response, to reading, and the use of reading, and personal development through reading. All of these should be interwoven into the treatment process.

I also would agree that learning to read reduces tension and reducing tension makes a person a better reader.

One point that I think is very important is to look for as many positive factors as we can. It means a great deal if a positive report can go back to the classroom—what the student is capable of doing—because the teacher has stressed what he cannot do.

DR. SHAFER: I was interested in the references to study of concept formation; and the references to reading in the life span . . .

Perhaps if teachers learn to listen to their students as the clinician listens, they may help solve many reading problems.

MARJORIE SEDDON JOHNSON

TEMPLE UNIVERSITY

9. Evaluating the Secondary School Reading Program

THE problem of evaluation in the secondary reading program could hardly have arisen fifty years ago. Few high schools were actively engaged in the teaching of reading. Students were expected to read, but a systematic program of instruction was not considered necessary. In general, the assumption appeared to be that all high school students read well enough. Practice itself was counted on to bring any improvements which might come.

It can safely be said, however, that today there is a broad, active interest, though not a universal one, in providing suitable instruction in reading to *all* secondary school students. Many devices, including administrative edict, have been used to assure attention to reading as an integral part of the high school program. Yet some schools still are not organized for this kind of work. How good is the work which *is* being done? What further *needs to be done* in order to assure a generation of mature, efficient, critical readers? These are the basic questions to which answers must be sought as we evaluate junior and senior high school reading programs.

Purposes of Evaluation

Too often, evaluation is confused with the much narrower concept of formal testing. The tremendous interest which has developed in this latter area in recent years sometimes seems like emphasis on testing for its own sake. Although this has certainly not been the intention of those working in the field, it has occurred. Extensive "evaluation" of pupil achievement has often been merely a matter of accumulating test data which seemed to have little effect on the teaching-learning program.

Evaluation is useless unless it is comprehensive and is a part of the total instructional plan of the school. The purpose of evaluation must

be to lead to the improvement of the program through a better knowledge of both the needs of the students and the degree to which these needs are being met (13). It seems obvious, therefore, that the objectives which the school is pursuing are basic not only to the plan of instruction, but also to the evaluative procedures which are employed. If the school is desirous of having its students merely compare favorably with those students in other schools in the conventionally measured areas of content and skills, "evaluation" is no difficult process. The administration of a series of standardized tests and comparison with national norms could provide the information. If, however, there is broader concern with those things which will enable the individual to function as a truly adequate reader in our society, such evaluation fails to do the job. In either case, the task is to find out how well the school is accomplishing what it sets out to accomplish.

Adequate evaluation demands an adequately conceived program. The objectives of the program must be clear, or there is no standard against which it can be judged. Basically, a reading program should be judged in terms of the specific reading performance and achievement of the students involved. This cannot be thought of narrowly as something which can be determined through standardized tests of reading achievement. It includes also such matters as the degree to which students are able to apply their skills adequately within the content fields, the amount and nature of beyond-the-school-assignments reading which is done, the attitudes and actions which develop from reading, and the standards by which students judge their own performance. Strang (12), concluding a discussion of evaluation, has stated: "Evaluation of reading programs is not an end in itself; it is a means to better instruction. . . . The present emphasis of evaluation of reading seems to be on continuity of appraisal and instruction, co-operation or the team approach, and complexity, which recognizes the broad view of reading instruction. . . ." (p. 397)

Simply stated, the fundamental questions to be considered in relation to the high school reading program are these:

1. Are all students showing progress, at an adequate rate, in the development of reading ability commensurate with their individual capacities for achievement?
2. Is the reading performance of the students such that it is contributing to adequate academic, social, and personal development?
3. Is each member of the school staff making his top-level contribution to the success of a comprehensive program designed to promote maximum

growth?

If these questions are considered, evaluation does not become a matter of satisfying curiosity, but rather a guidepost to point the way to progress.

Specific Areas to Be Evaluated

Defining the evaluation process as one part of a total instructional program may be something less than satisfactory for bringing about the desired results. Specifically what should the high school include in its evaluation?

Skills and Abilities. Any good program for the development of junior and senior high school students' reading ability takes into account a wide variety of skills and abilities. The competence with which the students can use these is one of the basic things to be appraised. If instruction is based on a thorough grasp of the nature and relationships of these skills and abilities, if the objectives of the program in terms of skills and abilities are clearly understood, constant evaluation comes as a normal part of the program.

Word recognition and analysis: The ultimate aim of the reading program, in relation to word recognition ability, should be the spontaneous recognition of virtually every word. Accompanying this ability to react effortlessly to the majority of words should be a reservoir of word analysis skills to unlock the few unfamiliar words which are met from time to time. One additional criterion must be met before the student can be considered truly adequate in his approach to the task of connecting meaning and oral language with the printed symbols. He must know when to use references such as the dictionary and the like and must be able to use them well.

Evaluation of the individual's achievement in this area cannot be made on the basis of an overall estimate of his handling of the word recognition demands he meets. It must, instead, be made in terms of the specific skills which he has acquired and the degree to which he uses them. Pertinent questions to be asked would be similar to the following:

Does he see base words in affixed forms?

Does he apply the final e principle?

Does he use the dictionary spontaneously to get the pronunciation of a word he cannot analyze on his own?

Does he use his oral language background as a checkpoint for his analysis of a printed form?

Does he skip over unfamilar words or use a slurred pronunciation rather

than attempt to analyze them?

Does he drop word endings?

These are questions directed at evaluating the individual's handling of specific elements in words or specific attitudes toward the task of word recognition. Only through questions of this type can his needs be discovered and his strengths appreciated. In other words, only as the result of an evaluation of this type can a sensible plan be evolved for his continuing instruction. Knowledge of the systematic nature of the development of word analysis skills is necessary if this kind of appraisal is to be carried on efficiently and effectively. The teacher cannot be dependent on tests which are administered at stated points throughout the student's educational career. The essential matter is how he operates in his daily reading.

Comprehension: There appears to be no reason for reading except to get ideas from the process. Comprehension is an integral part of what is meant by reading. Unfortunately, even though it has long been established that comprehension is not a unitary function, but a complex of many abilities, relatively little attention is given to the evaluation of the specific abilities and students' grasp of each. Finding out where the student stands in the comprehension area, however, is impossible unless individual evaluations are made in terms of those things which he is able to do and those things which he cannot do. Questions such as the following must be answered:

Can he answer factual questions based on the material?

Can he interpret the ideas in terms of his past experience?

Can he follow printed conversation?

Can he select materials which are pertinent to a problem?

Can he use headings, etc., to get an overall view of the material before more careful reading?

Can he follow the sequence of events?

Can he select significant facts from the material?

Can he differentiate between facts and opinions?

Can he get the intended meaning from satiric writing?

Can he generalize on the basis of what he has read?

Can he infer the author's feelings and purposes from the material?

Unless such questions are asked, the teacher cannot really become aware of the strengths and weaknesses in the individual's performance. Thus he cannot plan a truly appropriate instructional program to help him overcome these weaknesses.

Here, as in the area of word recognition, the teacher must be aware of

the sequence of abilities and the relationships among them. Efficient evaluation can be accomplished only if these interrelationships are known. Otherwise, the process would have to become one of checking on each individual ability even when it actually could be measured as a factor in a complex. There is no need, for instance, to check a child on ability to get specific details if he can demonstrate the ability to infer a main idea from specifically stated details. Were he unable to get the details, he would also be unable to make the inference. If the child is unable to make the inference about the main idea, however, the fault may lie either in his inability to infer, or in his inability to handle the specific details. In this case, more fragmentary evaluation would be necessary.

Versatility or flexibility: One of the marks of the really good reader is his ability to adjust to a variety of circumstances he meets in reading situations. He may find himself dealing with very easy materials which were written primarily for his entertainment. He may face the job of reading something so that he will be able to follow the directions which are provided. He may meet materials which are intended to set him off into deep thought about his attitudes and his actions. Materials which he meets will be written in a variety of styles, some of which include considerable padding around the main thoughts. On the other hand, some materials will present with each new sentence or phrase another meaty idea to be managed.

Reading in these varied situations requires versatility in both approach and specific reading techniques. The need for flexibility in rate is now fairly well recognized. Unfortunately, the reason for the changing rates of reading is often missed. The speed with which materials are handled is not the basic issue. The speed is determined by the kind of reading which is being done. It is an outgrowth of the characteristics of the material itself and the purposes for which it is being read. A direct relationship exists between the measurement which is done in the area of comprehension and that done in terms of versatility. How adaptable is the individual in choosing an approach which will allow him to get the kind of comprehension which is required? Pertinent questions in this area would be similar to these:

Can he skim materials to get specific information?

Does he get bogged down with details when they are not necessary?

Does he read everything the same way and at the same rate?

Can he use organizational and structural devices to guide a first, survey reading of study materials?

Answers to these and similar questions would provide evidence on whether or not the individual was equipped to approach reading with adequate flexibility.

Degree of Self-direction. Virtually every teacher has met the pupil who appears able to use all the varied skills to which he has been exposed but does not use them. This is the person who can find the main idea when he is instructed to do so, but never thinks to do it on his own. Or this is the person who will pick up a book which will not help him, but does not realize its lack of suitability until someone asks, "Will that book really help you solve your problem?" Or this can be the child who is perfectly capable of skimming if the teacher says, "Do you have to read every word to get that answer?"

An important part of the evaluation of each child's progress in reading is that which reveals the degree to which he can be self-directing rather than dependent on the teacher or the instructions in the book or test booklet. A truly efficient reader uses the abilities which he has, uses them spontaneously, in fact frequently uses them with no conscious consideration of them.

In choosing materials: Many factors need to be considered in the area of choice of materials. Reference has already been made to the necessity for choosing materials which are relevant to the job being done at the moment. All of the abilities which are taught in the field of deciding on the pertinence, reliability etc., of reading materials, however, would be taught uselessly if the child did not make use of these skills.

Another very important consideration in the choice of materials is that of the degree of difficulty. Is the child capable of picking out materials which he can actually read with full understanding? Is he willing to surrender the satisfaction of getting ideas from a book for the satisfaction of carrying what looks like a "hard book?" Is he aware of the fact that he could be reading satisfactorily a more complex book which would offer him additional information and enjoyment? If the child is dependent on another to decide what book he can read, he likely is not really much of a reader.

In applying skills and abilities: As a child learns any skill or ability, he will probably need close guidance in its use. However, once he has mastered the process, he should be able to function without being reminded. There appears to be, with many children, a stage at which they can use a skill but do not think to do so. It has not yet become so much a part of them that they use it naturally.

In the area of word recognition, this can be seen very clearly. Many children seem to go through a stage in handling affixed forms, for instance, at which they know all the parts but do not use them. When a teacher asks, "What is the base word? Is there a prefix? What suffix is added to the base form?", the individual is able to see these parts and to use their pronunciations and meanings to arrive at real recognition of the word form. However, until the suggestions are made, the word appears to them as one big, complicated, unknown jumble of letters. One might say that the student knows how to do the job of using base words and affixes for analysis of word forms. At the independent level, however, he does not really have this as a part of his repertoire of word analysis skills.

In comprehension the same is often true. The child can do a particular kind of thinking in his reading, but he does it only under direct stimulation. In instructional situations, where the teacher is providing this stimulation, he functions well. In his independent reading, however, he does not. To say that he is able to draw inferences of a particular type is not enough if actually he does not do this on his own. If he thinks critically when the teacher asks for this kind of performance directly, but acts like a sponge, subject to absorbing anything when he is on his own, he is still far from a mature reader.

In setting purposes and deciding on approaches: Until an individual can guide his own reading of material, he cannot be considered to be an independent reader. For much of the work of the secondary school reading program, the child's job is actually one of guiding himself. Many assignments demand that he do this, and rightly so since he will not always have a teacher available to guide him. Whenever he has the required abilities, he should take on the major share of the guidance himself. Frequently, however, there are children who are not good readers in the sense that they can guide themselves. They can read to accomplish a particular purpose if someone tells them what the purpose is. They can find out something if they are told what to find out. They can get the important ideas if someone tells them that the important ideas are to be gotten. They can read something for details if they are told to get the details.

When they are not guided, on the other hand, they find that they are reading along with no particular object in mind. There is no real goal which they are pursuing. They do not even pick out the clues which the author has written into the material to help with the setting of purposes and directions.

Students of this type cannot pick up a piece of material, look it over,

decide what they might expect to get from it, and then read it in the most suitable way. Instead, they go ahead aimlessly, using whatever approaches and techniques come most easily to them. They are not really readers in the true sense of the word.

Too many evaluations are made in artificial rather than normal, everyday, practical situations. The artificial situation cannot provide information on the individual's mode of operation in his daily activities. For appraisal of self-direction, the hour-by-hour performance of the child must be evaluated.

Methods of Evaluation

Varied means can be used to evaluate achievement and progress. Both formal and informal tests can and should be used. Teacher observations should be made and recorded. Pupil appraisals should be encouraged. Every available means should be used to acquire information about the effectiveness of the program.

Tests. The first thought when evaluation is mentioned is usually of a structured test of some type. Certainly this is true in the reading program. Various types of tests exist and each has a place in the overall program of evaluation. Possibly the most widely quoted (and the least effective in leading to improvements in the instructional program) is the standardized achievement test. Many of these are available for use at the secondary level. Davis (4), Lennon (7), and others (8) have evaluated many of these tests and their use in schools. Both weaknesses and strengths inherent in the use of existing tests have been recognized. Suggestions have also been made for better interpretation of the results and for advances in test construction to meet the needs of the school.

Several things must be kept in mind in relation to standardized tests of reading achievement. First, they are designed for group administration and comparisons between groups or of an individual with a group. They are not designed, even those which purport to be diagnostic, to give a full analysis of the individual's competence and performance in all facets of reading. In the diagnostic tests, not all skills, abilities and attitudes can be measured and those which *are* measured often are tapped by only a very limited number of items. Smith and Dechant (10) have stated that "for effective diagnosis, the teacher must rely on his observations of the child and his reading skills and deficiencies." (p. 431)

Second, the reliability data quoted in the manual for a standardized test are, in virtually all instances, reliability figures for group results, not

for individual performance. This means that there is no guarantee that a particular individual will earn a comparable score on a second administration of this type of test. Many factors may influence the level of operation of a student on a test that he takes at a particular time under specific circumstances. An extreme case of change in performance may make the point that one test score cannot be considered as a definite indication of the child's "true" level of functioning. Wayne took a standardized reading test as a part of a complete diagnostic examination in a clinical situation. He scored at a very low level. Two days later, after he had started a summer program for the improvement of his reading, a second form of the test was administered because it was felt that the first did not give a real picture of what he could do. He was much more relaxed at this time and worked quite well. His score on the retest was four grade levels higher than it had been on the original test. Certainly, this did not represent an improvement in general reading ability, but merely a better application to the test situation after certain anxiety-producing circumstances had been removed. Difference in scores would not often be this great on successive administrations of a test, but the possibility of change in any specific individual's performance is always present.

Third, little opportunity is offered for practical use of test results if only scores are considered. Too often, only the score is retained. In fact, many high schools attempt to alleviate the "clerical" burdens placed on teachers by having the standardized tests scored outside the realm of the classroom. In all too many cases, the teachers concerned see nothing but the scores or the profile which results from the testing. These offer nothing to the teacher in terms of information which would be helpful in planning subsequent instruction. Perhaps some errors in scoring are eliminated in this way, but the losses seem to offset the potential gains. Fourth, the tests which are designed for particular age or grade ranges are not always appropriate for the students within this group. If a child is unable to handle the test designed for his grade level, nothing is discovered which was not known before the test was given. The results simply say that he cannot read well enough to handle this material. The teacher undoubtedly knew this beforehand. At the other extreme is the child for whom the whole test is much too easy. His abilities are far above the range which the test covers. Again, the information gained through the administration of the test was already available—he is a better reader than those usually encountered at this age or grade level. How far his abilities extend or what higher level needs he might have remain a mystery. Only through

differentiation of testing as well as differentiation of instruction can this weakness be overcome.

Many of the same elements would be in operation in structured tests of other types. Teacher-made tests frequently are no more revealing, more reliable, or more suited to the individual than are the standardized ones. If these are to be really helpful in evaluating the reading performance of the students, they must be designed to do a thorough and pointed job which will really reveal the strengths and weaknesses of the individuals being tested.

Testing devices such as the informal reading inventory are also actually structured tests, but ones which measure against absolute standards rather than comparing with norms. On either an individual or a group basis, inventories can serve a useful function in appraisal of reading ability. Much, however, depends on the competence of the teacher or clinician who is administering the inventory. The amount of information which can be obtained is limited by the observational powers of the tester.

The basic pattern of the informal inventory is the use of graded selections for oral and silent reading, with thorough comprehension checks on all of the material. As the reading is done, an accurate record is kept of the performance and the responses to questions which are asked. Reading is done in a purposeful situation and a variety of types of skills and abilities is tapped. Determination of the instructional and independent reading levels is made in terms of certain definite criteria which have been established. Analysis of specific responses provides an opportunity for actually evaluating the individual's ability to handle specific skills and abilities.

Various reading inventories have been developed and are available for use (1, 2, 3, 9, 11). Discussions of their use are also available. Probably most useful to the regular classroom teacher in the secondary school, however, is the modification of informal inventories for classroom evaluation. The science teacher is most concerned about the performance of his pupils with science materials. The social studies teacher is concerned about the handling of other materials and certain skills which are particularly applicable in his field. The best measurement of these will come if materials comparable to those used for instruction in the particular area are used in the evaluation process. Group inventories can be constructed to meet these needs. (2, 5, 6)

Diagnostic Teaching

It has been said repeatedly that all good teaching must be diagnostic

in nature. Effective evaluation of the high school reading program is particularly dependent on the presence of diagnostic steps as an integral part of the instructional program. It is through this means that the real job of evaluation in the area of application of skills and self-direction must be done. The diagnostic side of teaching must encompass not only the directly instructional situations, but also the independent activities which the child carries on as a part of the teaching-learning program.

The teacher, of course, must know what it is that he is attempting to evaluate if he is to be proficient in this kind of appraisal. His awareness of what is involved in doing an effective job in reading will be the boundary of his evaluation. Only as he understands the various skills, abilities and attitudes which are important will evaluation of them become an essential part of his teaching.

Only as evaluation becomes an integral part of the instructional program, carried on in each classroom by each teacher, will maximum gains be realized. Formal testing must basically be considered only a supplement to the systematic observations of the teacher.

Conclusions

Three questions were posed as basic ones to guide the evaluative aspect of high school reading programs. These were related to the individual's rate of progress in terms of his capacity for achievement, his overall development, and the contributions of all staff members to the effectiveness of the instructional program. It has been proposd that diagnostic teaching, based on thorough understanding of the reading process and reading abilities, is the foundation of good evaluation. Structured tests of various types can be used for screening, group comparison, individual and group diagnosis.

Unless each teacher who works with a child is aware of his specific assets and liabilities in the area of reading, evaluation cannot be said to be complete. Unless the results of the evaluation result in changes in the instructional program, desired changes in reading performance are not apt to occur. Unless desired changes in reading performance do take place, the reading program of the school cannot be considered satisfactory.

Finally, it seems fair to say that evaluating the high school reading program cannot be done apart from the rest of the program. Instead, it must be accomplished with full attention to the aims of the total school program. There must be recognition of the fact that a good program in any content area demands a good reading program if the students are to be

able to function adequately. The reading program and evaluation of it must involve all pupils, all teachers, all subject matter fields. It is a continuing program which has much growing yet to do.

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Discussion

Dr. Shafer: I think it's interesting to note the connections between this paper and others, particularly the Burton paper. Here we have a statement by Professor Johnson that we really do not have the tests adequate to measure reading at higher levels of comprehension in the subject field. She calls upon the people in the subject field to develop a list of abilities drawing from the structures of those fields. We can't construct tests to measure the abilities until we know what the abilities are. Now Burton attempted to define these for literature. We need something similar in other fields and a concern for instructional procedures to follow from this.

Sr. Julitta: The emphasis given to the pupil's self-direction in reading, I think, is a point that we ought to consider quite seriously. Many times students are able to attain the skill that we expect in reading, but it is not a functioning skill.

The student may come out with a rather good rating on a standardized test, or at least up to grade level; however, his functioning in actual situations in which he needs a complete understanding of the material is not that high.

Dr. Robinson: Dr. Johnson discussed two different evaluations. One is the evaluation of the reading program; and the other is evaluation of student progress. I would like to point up the importance of evaluating the total reading program in the school in and through and related to pupil progress. We have talked since yesterday about the necessity to have all teachers participating in the reading program. We need to look for this in evaluating the school program. How much participation is there? Is it active; is it middle level; is it passive?

Evaluation implies measurement or rating against some kind of standard. If we're going to assess growth, we need to ask, against what? I noted numerous references to adequate, quick growth; rather quick progress. I think we have to ask: What are our needs? Adequate to what? We must avoid vague generalizations. Each school is going to have to answer specifically these questions when it decides to evaluate the program or pupil progress; or, preferably, as they relate to each other.

J. Wesley Schneyer

University of Pennsylvania

10. Significant Reading Research at the Secondary School Level

THIS paper does not purport to be an exhaustive review, but attempts to examine the nature and direction of some of the significant reading research at the secondary school level. Research at the elementary and college levels is also included when particular studies contain implications for reading in the junior and senior high schools.

In a discussion of trends based on samples of reading research taken in 1945, 1950, and 1955, Smith (29) noted "a dearth of research on reading in high schools. Including all articles sampled (N=230), 61 per cent concerned elementary school children, 13 per cent, high school pupils, and 26 per cent, college students." The subsequent years of investigation have not greatly amended the paucity of research at the secondary level. Out of some 500 references in the annual summaries of reading research contained in the February issues of the *Journal of Educational Research* for 1960 through 1963, approximately 16 per cent of the studies reported involved secondary school students. If the approximately 500 items had been reduced to only those reports which were examples of rigorous research procedures and methodology, the percentage might have been still smaller.

In a critical review of reading investigations published between 1940 and 1950, Scott (28) describes their major characteristics as "voluminous," "fragmentary and unrelated," "practical rather than theoretical," "oriented toward content, methods and mechanics," "varied in quality," and "varied as to importance." He adds that the "most tantalizing and stimulating characteristic of reading research findings is their inconclusiveness." While to a certain extent, these same characteristics continue to describe some of the research produced from the ensuing period to the present, an increasing proportion of the studies now being published are

more thoughtfully planned, more carefully controlled, more rigorously analyzed, and more soundly evaluated. One can be encouraged with Scott, who concluded: "With proper tending, pruning and thinning," the forest of research in reading "can be greatly enhanced in value." This paper represents one attempt to "tend, prune and thin" reading research at the secondary level and to emphasize pertinent issues which still need further investigation.

Reading research has covered a wide range of problems. However, certain areas appear to have been more widely and carefully investigated than others, and to contain problems which appear to be more significant and urgent at the present time. The following areas will be considered in this report: (1) Identification and Measurement of Reading Skills; (2) Effects of Reading Improvement Upon Aptitude Test Scores; (3) Self-Directed Teaching of Reading Skills.

Identification and Measurement of Reading Skills

A review of the literature on reading research at the secondary level, including reports of reading research as well as critical appraisals of reading research, reveals a renewed interest in the fundamental nature of the reading process. Strang (31) and Scott (28) in their critical reactions to reading research raise serious questions concerning our present understanding of the dynamics of the reading process.

Strang, for example, suggests that an understanding of "the dynamic process by which individuals of different ages, mental abilities, interests, and backgrounds actually comprehend and interpret what they read" is prerequisite to test construction and the improvement of reading instruction. Such questions as "What is the nature of comprehension?" and "How does the reader actually achieve adequate comprehension?" are basic to an understanding of the reading process. Similar questions pertaining to the nature of and measurement of vocabulary and speed of reading are also fundamental to the understanding of the reading process. The following sections of the paper will consider a few of the basic issues and will review some of the pertinent research.

Comprehension

Lennon (18) notes that an examination of reading tests reveals some seventy or eighty reading skills which appear to be individually identified and measured. However, as he suggests, it is one thing to prepare extensive lists of components of the silent reading process, and quite another

thing to devise true measures of these specific skills which are not actually measures of a more general or global reading ability. (18:327)

Factor analysis was one of the earliest approaches to the problem of identifying measurable components of the reading process. Probably the best known of this type of study was Davis' (6) attempt to identify some of the basic factors in reading comprehension and to devise a means of measuring them. Davis employed nine skills of reading comprehension which he had derived from the literature. Tests based on these skills were administered to college freshmen. A factor analysis of the test results disclosed nine factors corresponding to the original nine postulated by Davis, six of these clearly significant. Two of these factors, word knowledge and reasoning in reading, were found to account for 89 per cent of the variance.

Using a different method of factor analysis, Thurstone (34) reanalyzed Davis' data, and reported that only a single factor of "reading ability" could account for the obtained correlations. Later studies by Conant (5), Derrick (7), Harris (13), and Hunt (14) furnished additional support for the theory that a single general factor appears to underly most reading comprehension. Apparently a factor of general verbal ability or knowledge of word meanings (highly correlated with measures of verbal intelligence) accounts for most of what is actually measured in comprehension tests. At most only one or two other comprehension factors (such as, "seeing relationships among ideas") appear to have been identified as being "measurable." Lennon (18) and Jenkinson (16) have suggested that reading comprehension at the high school and college level may consist of a complex of interrelated and independent skills that cannot be measured individually by previously tried statistical techniques.

Strang (31) has pointed out that factor analysis cannot be depended upon to discover *new* factors in reading comprehension, but that this procedure only rearranges previously identified factors into new patterns. Fresh approaches to the problem of measuring comprehension must be made if we are to obtain new insights into the process through which the individual reader reconstructs the meanings of an author from printed materials.

In a discussion of new methods for measuring comprehension, Gray (12) suggested the possibilities of retrospective and introspective techniques as tools for furthering our knowledge of the comprehension process. One such investigation employing these techniques was conducted by Piekarz (24) using sixth grade children. Piekarz was concerned with the process

of reading itself—particularly "how meaning is derived from the printed page . . . and what factors influence the way pupils interpret reading materials." (24:303) The subjects of the experiment were twenty-two pupils with better-than-average reading ability and intelligence. The pupils were asked to read a selection about parent-child relationships. The selection was read first silently, and then orally in short units while the pupil verbalized his thoughts. Each pupil was then asked thirty questions about the material which he answered orally, explaining his reasoning processes where necessary.

An analysis of the verbal responses of the pupils who made the highest comprehension scores showed that these pupils made a greater variety and number of responses which were more evenly divided over three areas of comprehension: literal meanings, implied meanings, and a critical evaluation. These high level readers tended to remain objective and impersonal, to enrich the author's meaning from their own experience background, to restrict their answers to the text material, and to employ personal illustrations only to prove a point. They were able to control their own personal reactions even though these were strong, and they were able to distinguish between their own opinions and those of the author.

The lower level readers limited their answers almost entirely to literal meanings, and had difficulty in maintaining an objective attitude. It was hard for the low level readers to separate their own opinions from the author's, and they tended to base their evaluations on an emotional plane rather than upon an intellectual one.

This investigation explored new possibilities for evaluating comprehension through introspection and retrospection. However, this exploration was based upon certain concepts of reading comprehension which had been suggested by expert opinion or by factor analysis studies. That is, while this study represented a forward step in terms of utilizing rather untried procedures, it did so within a traditional frame of reference. It still remained for other investigators to penetrate in greater depth the actual intellectual processes which are involved in reading comprehension.

Jenkinson (16) undertook such a study using a cloze test rather than a series of questions as a means of evaluating the reader's comprehension of a passage. The cloze test is similar to an extended completion test in which a series of blanks occur within a reading passage at regular predetermined intervals. The reader is asked to supply the precise word which the author intended.

The subjects of the study were 210 high school students in grades ten,

eleven and twelve. The students were presented with three types of cloze tests. The first was based on allegorical material, the second on descriptive-metaphorical material, and the third on material of an ironical nature. On the basis of the cloze tests results, twenty-four students were selected for further interviewing. Twelve of these were students with high cloze scores and twelve had obtained low scores. During the interview, each student was asked to complete again two of the cloze passages that he had completed previously and to explain as fully as possible the reasons for his insertions as he went along. Following this, each student took another cloze test that he had never seen before and again verbalized the reason for each of his responses.

The responses of each student were then analyzed and a classification scheme consisting of three categories was devised. The first category, labeled "structure," was concerned with the basic elements of language, and the manner in which this controlled the subjects' selection of words to insert in the cloze passage. The "semantic" category included responses involving ways in which the subject obtained meaning from the passage. The final category "approach" dealt with the method by which the reader attempted to derive meaning from the passage. These three categories were further subdivided to include a number of separate elements.

The results of this study demonstrated, among other things, that high scorers on the cloze tests (those who had supplied the greatest number of correct words in the blanks) tended to relate more ideas. The high scorers had a better understanding of language structure and made more frequent use of grammatical and syntatical clues to meaning than did the low scorers. The high scorers also showed a more active role in interpreting the author's ideas according to the author's own words rather than substituting the reader's subjective ideas from his own experience. The low scorers, on the other hand, tended to verbalize fewer ideas, many of which were irrelevant and concerned purely with personal reminiscences. Jenkinson concluded that there were "observable and classifiable differences in the introspective and retrospective verbalizations of those who make high scores on the 'cloze' test and those who make low scores." (16)

It is worthwhile to note here an interesting point concerning the relationship between knowledge of language structure and comprehension, which was referred to above in Jenkinson's study. In two investigations of this problem at the high school level using objective measures of grammatical structure, O'Donnell (22) and Strom (32), found little relationship between knowledge of grammar and syntax and reading comprehen-

sion. O'Donnell used both a self-made test of language structure, and a standardized test of grammar. He found only moderate correlations (.44 to .46) between these tests and level of comprehension as measured by the Cooperative English Test, Reading Comprehension. Strom also investigated the relationship between the ability to comprehend materials of a literary or informative nature and the ability to analyze grammar and syntax of sentences. The subjects of the study were 327 tenth grade students selected from ten public and private schools in eight states. The students were tested on vocabulary, comprehension, and knowledge of grammar and syntax in sentences making up ten passages.

An analysis of the data revealed a correlation of .57 between comprehension and knowledge of grammar for the public school students and a correlation of .39 for the private school students. Strom concluded that there was little relationship between knowledge of grammar and comprehension ability as measured by the instruments used in the experiment. Strom also noted however, that in a group of four experimental classes there was a marked relationship between the two factors studied. She suggested that the difference in the findings might be explained in the way grammar was taught. In the groups where there was little correlation between comprehension and grammar, the traditional method of teaching grammar was followed. But, in the experimental classes, grammar was taught according to a program developed by linguistic specialists. Strom suggests that the emphasis in the newer approaches to grammar may make the relationship of grammar and reading clearer to the student.

In contrast to the studies of Strom and O'Donnell, Jenkinson (16) found that her high scorers made significant use of knowledge of grammar and syntax in unlocking meaning from reading passages as revealed by their responses on the cloze test. One explanation for the significant difference of Jenkinson's findings may be the greater sensitivity of the cloze test in allowing the students an opportunity to explore the relationships of language structure to their understanding. Their use of grammar and syntax clues as aids to comprehension may have been more obvious to them as they verbalized their responses to the cloze test. A second explanation for the difference may be that Jenkinson's study compared high comprehenders with low comprehenders and perhaps the difference in findings was due to differences in verbal intelligence or verbal ability between the two groups. In the studies by Strom and O'Donnell perhaps the difference between good and poor comprehenders was not as evident. Whatever the explanation of the differences, further explorations of the

relationship between knowledge of grammar and syntax as aids to comprehension involving actual reading situations would appear to be fruitful sources for further investigation.

Jenkinson also studied relationships between cloze test scores and objective scores on standardized reading tests. Based on scores obtained from the Cooperative English Test, Test C2: Reading Comprehension, she found a correlation of .78 between cloze scores and vocabulary, and a correlation of .73 between cloze scores and level of comprehension. These correlations, both significant at the .01 level, are as high as the reliability coefficients for many silent reading tests.

In another investigation using the cloze test, Rankin (26) found that cloze scores based on deletions of nouns and verbs from a passage produced lower correlations with group tests of intelligence than did cloze scores based on deletions of words at regular intervals regardless of the part of speech. He also noted the possibility of using pre-cloze tests (those administered before the actual reading of the complete passage) as a means of evaluating a reader's previous knowledge of a subject. This test score could then be compared with a post-cloze test score (taken after the reading of the completed passage); the difference indicating the actual comprehension of the passage, free of the influence of previous information. Thus, the cloze procedure, originally devised by Taylor (33) as a measure of "information," may prove to be a promising tool for exploring the nature of reading comprehension and the manner in which individual readers may arrive at effective comprehension.

Another matter that recent research has illuminated concerns the validity of multiple-choice techniques in the measurement of reading comprehension. Preston (25) investigated the ability of entering freshmen at the college level to respond correctly to multiple-choice items in a standardized reading comprehension test without having previously read the reading passages from which the test items were taken. A group of 128 students took a passageless test based on the first thirty comprehension items of the Cooperative English Test, Test C2: Reading Comprehension, Form R. The subjects were asked to select the best response to each item based on their experience in dealing with such multiple-choice tests. Analysis of test results revealed that the subjects "were able to recognize correct answers without reading the passages on which the questions are based." The author suggests "that by . . . intuitive analysis, learned through years of experience in taking tests and practicing on comprehension exercises, the student acquires test 'wisdom'."

Further substantiation of this phenomenon was offered by Vernon (36) in a penetrating investigation of the components of comprehension and a comparison of the effects of essay-type questions versus multiple-choice questions in the measurement of reading comprehension. The subjects were groups of American and British college students who took a series of eleven tests to measure various aspects of reading. One of his findings indicated that American students obtained superior results on comprehension tests involving multiple-choice items. The scores of the British students on these same tests were initially lower, but tended to improve with succeeding administrations of different multiple-choice tests. Vernon notes that the significant improvement of the British students following practice on the multiple-choice type tests "illustrates the importance of facility or sophistication at such tests."

Vernon also compared the results of comprehension tests in which understanding was based upon questions answered after the reading of the passage without reference to the content, with the more conventional procedure which permits rereading during the answering of the questions. Vernon reported that the former type of test "appeared to measure a somewhat different ability from the conventional immediate comprehension test and it was found to be considerably more valid . . . in predicting academic achievement."

Kingston (17) has observed about reading survey tests, "other than technical refinements in the instruments themselves, there has been little advancement in the past forty years." There is a need for reading researchers to re-examine current concepts of reading comprehension and to experiment with new methods for its measurement. The cloze procedure is one of the methods which appears to offer promise as a new diagnostic tool. For example, a comprehension test might be constructed consisting of cloze passages of varying types of content. In some of the passages just words relating to basic concepts in the content may be deleted. In other passages the deletions may consist of words which provide clues to relationships among the ideas. A comparison of scores on the two types of passages might offer clues as to a student's competency in dealing with these two aspects of comprehension.

Vocabulary

Although fewer studies were concerned with the problems of vocabulary measurement, questions concerning measurement aspects in this area were also raised.

Hurlburt (15) investigated the comparison of "the active or writing and speaking vocabulary with the latent or reading vocabulary of high school students." She constructed tests containing multiple-choice items measuring recognition and tests containing completion items measuring recall. Separate items involved nouns, verbs and adjectives. The subjects were 192 ninth graders and 210 eleventh graders. Each student took two forms of each type of test with the recall-completion form taken prior to the recognition multiple-choice form. The results indicated that the average student in grades nine and eleven was able to recall and write 45 per cent of all words he was able to recognize correctly, 60 per cent of the nouns he was able to recognize, 42 per cent of the verbs, and 32 per cent of the adjectives. The investigator concluded that the two types of tests "have only a limited number of factors in common."

Dolch and Leeds (9) posed the question: "How well do existing vocabulary tests measure children's knowledge of word meaning?" They compared the total number of words in five vocabulary tests to determine the extent to which these words were included in a widely used school dictionary. They reported that the percentage of the various parts of speech found in the vocabulary tests was about the same as the sample of words from the dictionary.

But, even more important, Dolch and Leeds found that the word accepted as the right answer in scoring the vocabulary tests was "almost universally . . . the first or most common definition" for each word. They discovered that other derived meanings of the word, homonyms, and figurative meanings were seldom included as appropriate choices. The authors raised serious questions about the adequacy of many vocabulary tests for providing true measures of a student's meaning vocabulary. They suggested that vocabulary tests should measure how much students actually know about a word's meanings, rather than the fact that they recognize "a meaning" for the word. As Hurlburt (15) noted in the study previously cited, a student may recognize the correct meaning for a word from a multiple-choice selection, but not really be able to recall the word for use in his own writing.

In line with the suggestion by Dolch and Leeds (9) that vocabulary tests should measure more than a student's recognition of a single meaning for a word, Russell (27) completed a very thorough investigation of children's meaning vocabularies in grades four through twelve. The subjects of the study included 1,752 children in grades four through twelve. Using words from four areas—science, social studies, mathematics,

and extracurricular activities—Russell constructed vocabulary tests to measure depth of meaning and breadth of meaning.

The depth of meaning tests were based on items which required children to respond to increasingly difficult questions about concepts in mathematics and science. The results of the two tests indicated that the depth of meaning tests did not produce results significantly different from the vocabulary subtests of the California Reading Test. The author concluded that either the usual vocabulary test is also a measure of depth of meaning or that the tests used in the study did not adequately measure this area.

The two tests measuring breadth of vocabulary required the subjects to respond to six questions of comparable difficulty about certain social concepts and to supply the correct word in blanks in sentences in which four meanings for each word were required. These two tests had lower correlations than other tests with general vocabulary and all vocabulary subtests used in the study. Russell concluded that "measures of breadth of vocabulary such as these get at word knowledge not measured adequately in the usual multiple-choice vocabulary test." One other interesting conclusion was a tendency for the rate of vocabulary growth in social studies, science, and other areas evaluated in the study, to slow down at the senior high school level.

These studies by Russell and Dolch and Leeds seem to point up the need for further experimentation in vocabulary test design to complement those tests currently in use and to provide for a more extensive measure of vocabulary than presently permitted by existing instruments.

Speed

Research in the measurement of speed of reading is currently concerned with several problems. One of these problems is the shift from the consideration of reading speed as a unitary factor to the consideration of reading rate as varying and flexible.

Students enrolling in a reading course often ask: "How fast should I read?" The implication here is that there is a single optimum speed at which all readers should read all kinds of reading materials for all manner of purposes. Many silent reading tests which include a measure of speech of reading (such as the Survey Section of the Diagnostic Reading Test), provide only a single measure of reading speed based upon a single type of material.

Important pioneering investigations in the area of flexibility of reading

speed have been carried out by Flanagan (11), Tinker (35), Carlson (3), and Letson (19). In studies utilizing high school students as subjects, Flanagan (11) and Tinker (35) in separate studies concluded that relationships between speed and comprehension depend upon the purpose of the reading, the difficulty of the material, and the methods of measurement. Carlson (3) was concerned with the problem of whether the relationship between speed and comprehension remained constant or varied as the nature of the material and the reader's purpose varied. From the results of his investigation, Carlson concluded that: "The effectiveness of fast and slow readers as measured by accuracy of comprehension was dependent upon levels of intelligence, purposes for reading, levels of difficulty of material, opportunities for referral in answering comprehension items, and continuity of context."

Letson (19) followed this line of investigation by attempting to determine whether the nature of the material or the reader's purpose for reading was more important in determining rate of reading. The subjects of the study were 601 college freshmen, each of whom was given a two part test of reading flexibility. The first part evaluated the reader's flexibility of rate in accordance with the difficulty of the material, when the purpose for reading remained constant. The second part of the test evaluated the flexibility of rate according to purpose, when the difficulty of the material remained constant.

From the results of his study, Letson offered the following conclusions: "(1) the difficulty of the material exerts a greater influence on rate than does the purpose; (2) slowing down to read more difficult material is important to good comprehension, but it is not necessary to slow down for mastery of the material, provided the difficulty level of the material remains constant. The call to read for mastery appears to engender an altertness above normal, and such a mental set renders the reader capable of reading with greater comprehension and speed." (19)

Building from these research foundations, tests of reading flexibility have been developed by Spache (30), Carrillo and Sheldon (4), and McDonald (20).

There has been little consideration given to the problems of whether (1) reading flexibility can actually be improved, and (2) if the improvement can be measured by flexibility tests. One such attempt, however, has been reported by Braam (2). Two forms of a reading flexibility test devised by the author were administered to seventy-one college-bound high school seniors. One form of the test was administered before and

the second form at the end of a six-week reading improvement program sponsored by the Reading Camp of Syracuse University. The results of the pre-test reading rates when plotted on a graph are represented by a nearly straight line, whereas similar measurements on the post-test are represented by lines showing marked peaks and valleys. Based on these results, Braam concluded " (1) In addition to increasing reading rate, it is possible to develop increased flexibility in reading through a reading improvement program. (2) Flexibility and increased flexibility in reading can be shown by means of instruments such as the 'flexibility test' used here." (2:251)

The research described above appears to indicate that the relationship between reading rate and comprehension varies according to the reader's purpose and the difficulty of the material, that flexibility can be improved through direct teaching, and that this improvement is measurable.

Effects of Reading Improvement upon Aptitude Test Scores

Since reading ability appears to play a fairly large role in accounting for scores on group tests of intelligence (correlations between group intelligence test scores and reading test scores range from .50 to .80), one might postulate that improvement in reading ability would result in improvement in IQ scores. The evidence in this area, however, is conflicting. Three studies will be cited to illustrate the nature of the conflicting evidence.

Barbe (1) provided a group of 51 college students with a twelve-week reading improvement program. Each student was given an Otis Self-Administering Intelligence Test before and after the program. The author reported marked improvement in reading rate with comprehension remaining at a satisfactory level. Barbe reported a mean IQ difference of "only an insignificant plus 1.2 points" between the pre-and post-IQ tests. He concluded that the improvement of reading ability does not necessarily improve group IQ test scores.

Contrasting results were found by Pallone (23) and Dobrin (8). Pallone provided a group of 100 college-bound high school seniors with a developmental reading program for both six-week and six-month periods. The students were given the Scholastic Aptitude Test at the beginning and at the end of both the short-term and long-term programs. The results showed highly significant growth in the SAT-V scores for both the short-term and the long-term programs. Students who completed the short-term program made a mean gain of 98 points; those who

completed the long-term program alone made a mean gain of 109 points. The students who completed both the short-term and long-term programs made a mean gain of 122 points. Dobrin reported the results of a reading improvement program for college-bound high school juniors and seniors. Test results demonstrated significant improvement in SAT-V scores when the group receiving reading instruction was compared with a control group not receiving instruction.

The differences between the results of Barbe's study and the studies of Pallone and Dobrin may be accounted for in two ways: In the first place, the programs described in the Pallone and Dobrin studies were thorough developmental reading programs which involved instruction and practice in a variety of reading situations and in a variety of skill areas. The students received instruction to develop vocabulary, comprehension skills, critical reading skills, and flexibility of reading rate. The program in the Barbe study does not appear to have been of this type. In the second place, the students enrolled in the Pallone and Dobrin programs were specifically selected because of inadequate reading performance. The students in the Barbe study do not appear to have had similar reading difficulty. One might imply that the students in the Pallone and Dobrin investigations demonstrated improvement in SAT-V scores because they had learned to read more effectively, and therefore, to answer correctly more of the test items after they had completed the developmental reading program. The students in the Barbe study, on the other hand, may have been able to read the SAT-V test items without difficulty before they took the reading course.

Self-directed Teaching of Reading Skills

The increasing current interest in programmed learning and teaching machines appears to be stimulating interest in individualized or self-directed approaches to teaching reading. Two studies will be reported here illustrating the research that is currently available in this area.

In a two-part report of an investigation concerning the self-directed teaching of reading, Noall (21) discusses first, an individualized reading program at the high school level, and second, a comparison of an individualized approach to teaching reading with the traditional uniform class instruction.

To investigate the problem of meeting the wide range of reading skills existing at the high school level, the author first attempted to devise a program of reading instruction that would develop vocabulary, speed, and

study skills such as reading for organization, following directions, thinking critically and understanding graphic materials.

One hundred and fourteen high school students, 70 eleventh graders and 44 twelfth graders, were the subjects of the study. Before the experiment began, students took the following tests: an intelligence test, reading and achievement tests, a study skills test, and a critical thinking test. The latter three tests were also given at the end of the experiment. The materials used in the experiment included the SRA College Prep Laboratory, a unique type of mechanical reading accelerator called the Mahal Pacer, and a variety of specially prepared exercises to develop the various reading skill areas.

An individual program to meet the needs of students as revealed by weaknesses on diagnostic reading tests was provided for each student. The teacher communicated with the individual student largely through the contents of a folder which contained the specific practice activities and directions for proceeding. When analysis of student progress revealed certain common needs, small-group instruction was provided.

Analysis of the post-test results at the conclusion of the experiment revealed statistically significant improvement in all areas on the reading test, the study skills test, and the critical thinking test.

In a second part of the experiment, students in a summer school program who volunteered for reading instruction were randomly grouped into a class using self-directed procedures or a class using the same materials for all students and a uniform teaching approach. The two groups were simply told they would be working in different ways, and no effect was made to emphasize differences in experimental procedures for either group. Tests administered before and after the experiment included a form of the Wechsler Intelligence Test, the Iowa Silent Reading Test, the Morrison-McCall Spelling Scale, the Michigan Speed of Reading Test, the Durrell Phonetic Spelling Test, and a visual memory test. Analysis of initial scores showed that the groups were fairly evenly matched, with no statistically significant differences on nine variables.

An analysis of the final test results indicated that "both groups made statistically significant gains on two different reading tests; gains of nearly three grade levels after six weeks of practice." However, the gains between the two groups were not statistically significant. The lack of statistically significant differences in Noall's study does not obviate the contribution of her investigation. This was an important exploratory study describing in detail the multi-level materials, the individualized teaching procedures,

and the many problems of continued motivation which confront the teacher of a self-directed reading program. Noall's report also describes research with a new type of pacing device which certainly warrants further consideration. More investigations of this type are urgently needed.

Another experiment with self-teaching materials was conducted by Eichholz and Barbe (10) to determine if such an approach could result in the greater learning and retention of new words. The subjects of the study consisted of four classes of seventh graders in two schools, with one experimental and one control class in each school. There were no significant differences between the groups on initial tests of reading or intelligence. The authors prepared a series of twenty-word vocabulary tests in three forms. A specially designed formboard for easy self-checking of the tests was constructed for the experiment. Each test had the same correct choice for each word, but with different alternate choices. Each week all of the students in the experimental groups were given two tests and a story containing the words on the test. One test was taken as a pre-test, then the story was read, and then a second test was taken for homework. On the following week the third form of the test was given for evaluation purposes. The experimental group was also exposed to brief lectures on the history of words and other vocabulary activities. The control group took only the final test without the exposure to context. An analysis of the final results showed that the experimental group had learned and retained a significantly greater number of words.

These two investigations have considered in part the possibilities for developing self-directed teaching materials in reading instruction. They represent isolated beginnings in the attempt to individualize reading instruction at the secondary level. A much greater amount of research is needed to determine if such efforts to individualize instruction are worthwhile. Their effectiveness should be compared with sound developmental reading programs conducted with larger groups by thoroughly well-trained reading teachers.

Concluding Statement

This paper is a review of significant reading research at the secondary level and also includes reports from the elementary and college levels when they bear on certain problems. The main topics considered here represent particular areas of research which the writer believes are indications of important trends in reading research at the secondary level.

Based on the review of research included in this report, the following

conclusions might be drawn:

1. There is a need for revision of current instruments for measuring comprehension, vocabulary, and speed. New formulations or models within which to view our conception of the nature of each of these processes are presently being evolved.
2. There is some evidence that under certain conditions a developmental reading program may be able to increase the results of verbal-type aptitude tests.
3. There is little significant evidence at present that individualized reading programs at the secondary level are greatly superior to uniform group instruction.

One final observation appears to be relevant. The literature on secondary school reading contains many articles advocating a school-wide developmental reading program for all pupils in the junior and senior high schools. Yet a review of the reading research at the secondary level did not reveal a single well-designed research investigation concerned with a developmental reading program involving all members of a secondary school faculty in a cooperative effort. Research into the nature, values, problems, and methods of such an approach is sorely needed at this time.

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Discussion

Dr. Robinson: I think that in the time available Dr. Schneyer has done an excellent job in selecting and discussing the materials. Of course, any of us might make different selections or different reactions. All I can say is that his conclusions from what he covered are excellent.

Dr. Shafer: I'm interested in the last conclusion, of course; that, although we have been talking for the past two days about cooperative programs between subject specialists and reading specialists, we need to design and research these programs in a much more comprehensive way.

Once again we have heard, as in several of the papers presented, the call for a new conception of reading comprehension; a new model in which to view what happens when a student reads at higher levels of comprehension.

Sr. Julitta: There are more problems in the area of reading than in other areas because of the intangibility of factors involved in thinking. We should try to think along the lines of evaluating thinking abilities.

Dr. Schneyer: I just want to comment very briefly to be sure I didn't give the wrong impression. When I pointed out the limitations of measurement in comprehension, I was not concluding that the specific skills in comprehension which we had discussed in other sessions are not necessary and need not be taught. I'm simply pointing out that the measurement of these separate skills is extremely difficult.

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